

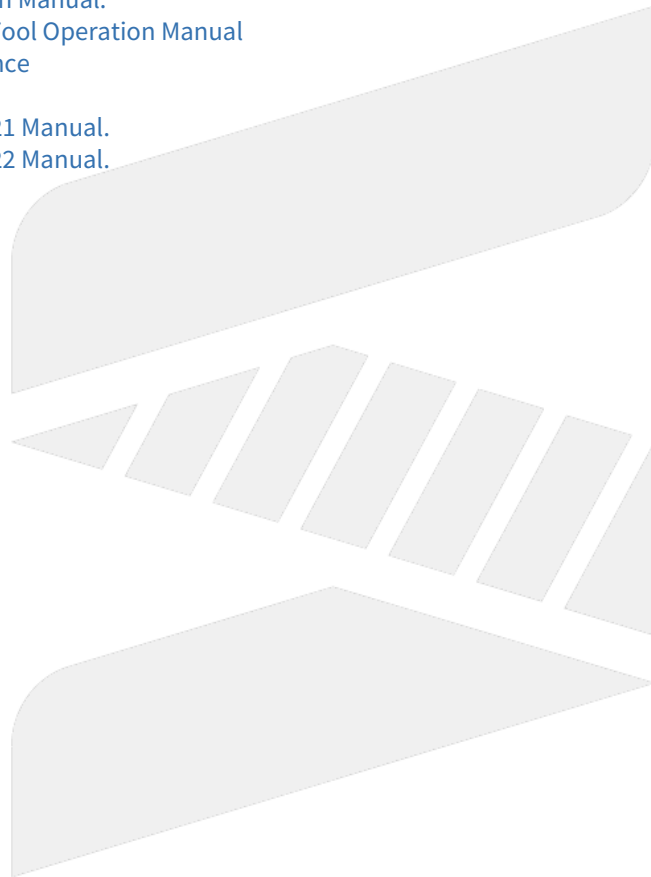


SYNTEC
TECHNOLOGY CO.,LTD.

Other Tool.

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- OKLogReader Operation Manual(CHT)
- Instruction of Remote Monitoring Application.
- SBTool Operation Manual
- Data Aggregators Application Manual
- Macro Editor Operation Manual
- AutoInitializer Operation Manual
- USB Backup Operation Manual
- Setting0.ini Application Manual.
- RemoteAPI Operation Manual.
- OS Transformation Tool Operation Manual
- AutoUpgrade Guidance
- Open Actions List
- AutoSDUpgrade_2021 Manual.
- AutoSDUpgrade_2022 Manual.
- FixFontFile Manual



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1 OKLogReader Operation Manual(HT)

OKLogReader 操作手册

1.1 Operation Log Reader Operation Manual

1.1.1 **Purpose**

The operation log reader can record the user's keystrokes when operating the machine, which can help the Machinery electrical control staff or customer service staff for troubleshooting.

1.1.2 **Version Definition**

Controller

- New version: 10.118.24B, 10.118.25B, 10.118.28O, 10.118.38 and above.
- Old version: Versions other than the new versions.

OKLogReader

- New version: Version 3.0.0 and above.
- Old version: versions other than the new versions.

1.1.3

How to Use

Controller-Operation Log Reader

Directory

5 Key

- **ARM** - F10 Next → F2 Diag. → F4 Operation Log
- **X86** - F10 Next → F2 Diag. → F10 Next → F4 About → F2 Operation Log

8 Key

- **ARM** - F10 Next → F2 Diag. → F4 Operation Log
- **X86** - F7 Diag. → F8 System manager → F6 About → F2 Operation Log

Screen Description

1. Each record shows the [Number] and [record data]. Order number 1 is the latest record.
2. Each page displays 80 records, and you can use PageUp/PageDown to see later or earlier records.
3. DOS displays up to 12 pages, while CE has no page limit.
4. Whenever you re-enter the history page, it will be updated to the latest record when you "entering the history page".

G54	O0062 NO L117700			Diagnostic		2021/5/18		14:44:34		DEFAULT	
Log Data											
No	Data	No	Data	No	Data	No	Data	No	Data	No	Data
1	14:43:11	17	14:42:50	33	14:27:14	49	14:26:54	65	14:26:49		
2	F10	18	Escape	34	Escape	50	User16320	66	Return		
3	14:43:09	19	14:35:47	35	14:27:09	51	14:26:54	67	14:26:48		
4	[S_MMach]	20	21/05/18	36	Escape	52	AdminLogin	68	9		
5	14:43:09	21	14:35:47	37	14:27:04	53	14:26:54	69	14:26:48		
6	Escape	22	User19890	38	F10	54	Return	70	0		
7	14:43:08	23	14:35:47	39	14:27:01	55	14:26:54	71	14:26:47		
8	Escape	24	LogOut	40	[S_MAlarm]	56	0	72	2		
9	14:43:07	25	14:27:25	41	14:26:59	57	14:26:53	73	14:26:47		
10	Escape	26	Escape	42	Escape	58	2	74	3		
11	14:42:59	27	14:27:25	43	14:26:58	59	14:26:53	75	14:26:46		
12	[S_MDiag]	28	Escape	44	Escape	60	5	76	Slit+ShiftKey		
13	14:42:55	29	14:27:16	45	14:26:55	61	14:26:52	77	14:26:46		
14	[S_MAlarm]	30	[S_MDiag]	46	Param3209Modified	62	Return	78	ProcessKey		
15	14:42:50	31	14:27:14	47	14:26:54	63	14:26:51	79	14:26:45		
16	[S_MMach]	32	Escape	48	21/05/18	64	0	80	ProcessKey		
						Busy...		Auto		電源ON 193.169.1.2	
										Alarm	
Find DateTime			Find Alarm			Find I-Bit			Export Operation Log		

Basic Operations

Export Operation Logs

- They can be exported to USB disks as file name OPLOG.0, OPLOG.1, and OPLOG.2. The file name OPLOG.0 is the latest record.
- File switch mechanism: When OPLOG.0 is full, the data in OPLOG.0 and OPLOG.1 will be moved to OPLOG.1 and OPLOG.2 (the data in OPLOG.2 will be overwritten and the system will rewrite OPLOG.0).
- The records occupy 4~6M and retain up to 1,536,000 strokes at most (buffer of 512,000 strokes).

Find Date Time

- Input format: yyyyymmdd or yyyyymmddhm.
- If entering 20110815, it will jump to the first record on August 15, 2011.
- If entering 201108151300, it will jump to the first record after 13:00 on August 15, 2011.
- Click "Previous" to jump to the previous timestamp.
- Click "Next" to jump to the next timestamp.
- If the input format is incorrect, a messagebox "format wrong!" will pop up.

Find Alarm

- Input format: alarm ID + alarm number.
- If entering MOT11, it will jump to where the first alarm MOT11 record is.
- If the input format is incorrect, a messagebox "format wrong!" will pop up.

Find I-Bit

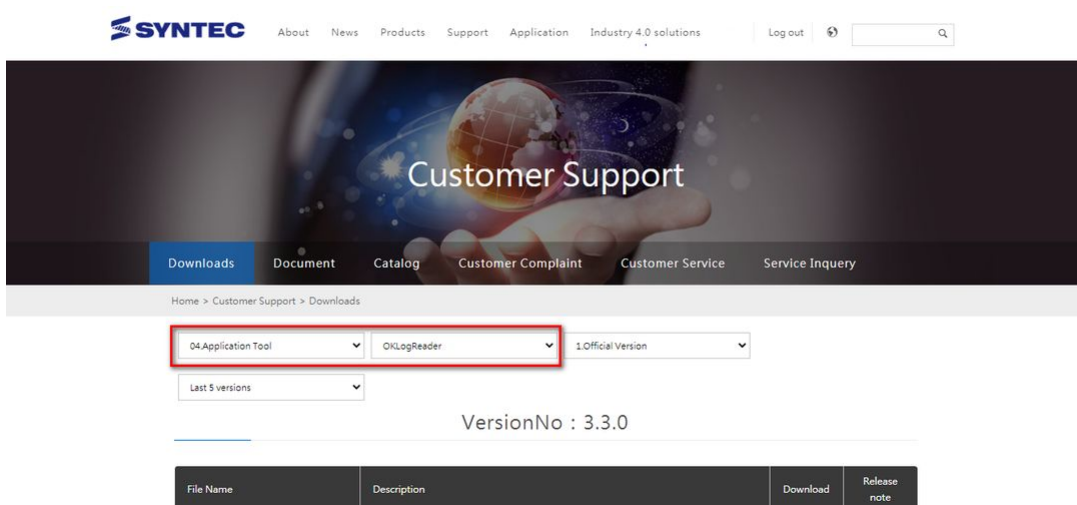
- Input format: I + number.
- If entering I88, it will jump to where the first I88 ON record is.

PC - Log Reader

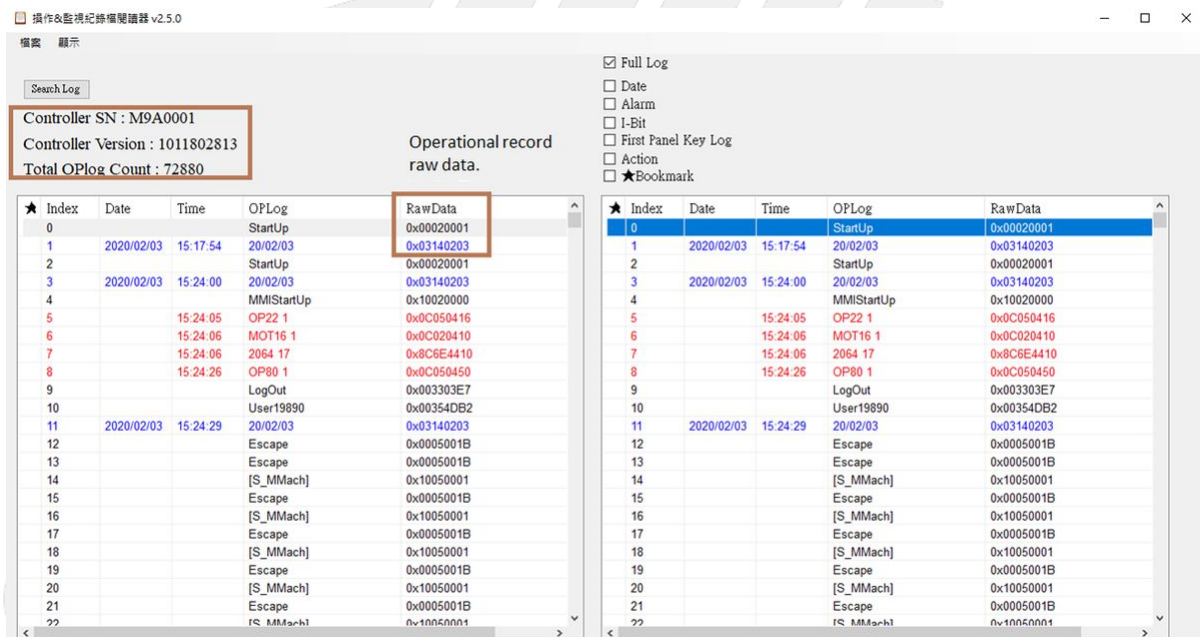
Download

To download the log reader, please go to SYNTEC official website → Customer Support → Software Download → 04. Application Tool → OKLogReader.

We recommend downloading version 3.0.0 and above. Please refer to "Version Matching and Display Specifications" for compatibility notes.



Basic Operations



- Note: OKLogReader displays the old record first and then the new record, in the opposite order of the controller. This operation is for OKLogReader to display operation logs and data logs in a consistent manner.
- Filtering: "Full Log" displays all operation logs, while "Alarm", "I-Bit" (second panel), "First Panel Key Log" (first panel), and "Action" can be filtered by multiple criteria.
- Jump to the previous/next identical value: After selecting a row in the list, pressing **F3** can jump to the next row with the same RawData value, and **Shift + F3** to the previous one.

- Searching: Press "**Search Log**" to bring up the search window. Fill in the criteria, then press "**FindNext**" to start searching from the highlighted row. It will highlight and jump to the latest record that meets the criteria. If you want to search for the previous one, you can check the "Upwards" box on the right before searching.
 - Search DateTime: The input format is yyyyymmdd or yyyyymmddhm. E.g. 20150213 or 201502130900
 - Search Alarm: The input format is Alarm ID+Alarm Number. E.g. MOT18
 - Search I-Bit: The input format is Alarm ID+Alarm Number. E.g. I66
 - Search Action: Refer to Appendix I for detailed human-machine action input format. E.g. S_MMach
 - Search RawData: Refer to Appendix II for detailed RawData input format. E.g. 0x100500BC
 - Search Index: The input format is Index number. E.g. 123
 - Search OPLog: The input format is OPLog string name, and it can be searched with part of the string (case as different strings). E.g. StartUp



1.1.4 Recordable data

💡 After LogReader 4.9.0, logs will display the date for each entry regardless of the controller version. For operations that record the date listed below, the actual date will be shown, while for the others, the date will be "estimated."

[New Version](#) [Old Version](#)

- New version means that the controller version is 10.118.24B, 10.118.25B, 10.118.28O, 10.118.38 or above.
- In the new versions, an additional timestamp will be recorded for all operations.

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Data	Display Format	Example										
Boot	An additional timestamp will be recorded. Format: StartUp.	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>11/04/15</td></tr><tr><td>3</td><td>17:07:58</td></tr><tr><td>4</td><td>StartUp</td></tr></table>	No	Data	1	17:07:58	2	11/04/15	3	17:07:58	4	StartUp
No	Data											
1	17:07:58											
2	11/04/15											
3	17:07:58											
4	StartUp											
Date	Font is yellow. Format: [Year]/[Month]/[Day].	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>11/04/15</td></tr></table>	No	Data	1	11/04/15						
No	Data											
1	11/04/15											
Time	Font is yellow. Format: [Hour]:[Minute]:[Second].	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr></table>	No	Data	1	17:07:58						
No	Data											
1	17:07:58											



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Data	Display Format	Example						
Alarm	Font is red. Format: [ClassID]/[AlarmID] + [ObjectID].	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>COR21</td></tr></table>	No	Data	1	17:07:58	2	COR21
No	Data							
1	17:07:58							
2	COR21							



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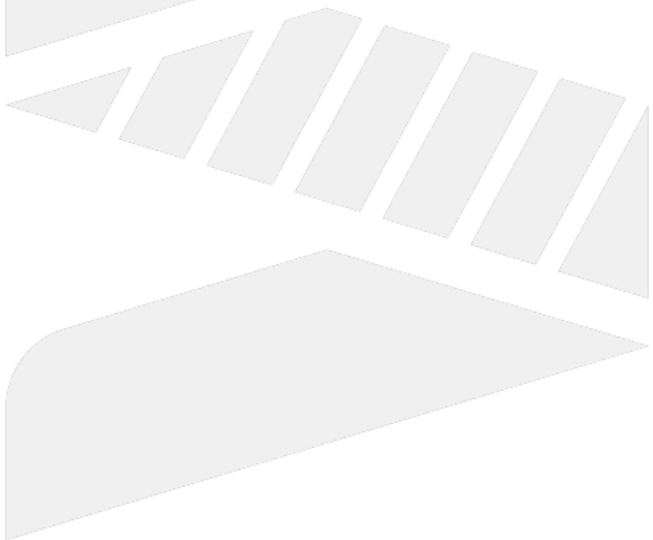
Data	Display Format	Example
	ClassID: COM: Syntax Compiler Alarm COR: Program Execute Error Alarm MAR: MACRO Alarm MOT: Axial Motion Alarm OP: Operation Alarm PLC: PLC Alarm PLCH: PLC Hint SPD: Spindle Alarm MSG: Macro Message SERVO: Servo Alarm M2Yas: M2 Yaskawa Alarm M2Syn: M2 SYNTEC Alarm M3Yas: M3 Yaskawa Alarm M3Syn: M3 SYNTEC Alarm SPLCA: Serial PLC Axis Alarm SRI: SRI Alarm BGND: Background Execute Alarm ROT: ROT Turret Alarm LASER: Laser Alarm ECAT_D: Delta ECAT Alarm ECAT_P_A: Panasonic ECAT Alarm ECAT_P_W: Panasonic ECAT Warning RBT: Robot Alarm RBTWRN: Robot Warning RBTCRI: Robot Critical INVTA: Inventor ECAT Alarm INVTW: Inventor ECAT Warning ECAT_SynStep_A: Syntec ECAT Step Alarm ECAT_SynStep_W: Syntec ECAT Step Warning ECAT_Syn_A: Syntec ECAT Alarm	

Data	Display Format	Example																
	ClassID: ECAT_Syn_W: Syntec ECAT Warning ObjectID: Axis, the default value is 1. OKLogReader <table><tr><th>before 4.9.0</th><th>4.9.0~</th></tr><tr><td>[ClassID]/[AlarmID] + [ObjectID]</td><td>[ClassID]/[AlarmID] + [ObjectID] [alarm string] (start from SI and has multilingual files in MB/SB)</td></tr></table>	before 4.9.0	4.9.0~	[ClassID]/[AlarmID] + [ObjectID]	[ClassID]/[AlarmID] + [ObjectID] [alarm string] (start from SI and has multilingual files in MB/SB)													
before 4.9.0	4.9.0~																	
[ClassID]/[AlarmID] + [ObjectID]	[ClassID]/[AlarmID] + [ObjectID] [alarm string] (start from SI and has multilingual files in MB/SB)																	
PLC Bit (I-bit)	Display format Controller The format is one of the following: 1. [PLC Bit Name]_[on/off] 2. The name of the second panel keypad defined in LogTable OKLogReader <table><tr><th>before 4.8.0</th><th>4.8.0~</th></tr><tr><td>I{ Num }={ Value }</td><td>I{ Num }={ Value }, { Comment }</td></tr></table>	before 4.8.0	4.8.0~	I{ Num }={ Value }	I{ Num }={ Value }, { Comment }	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>I63 On</td></tr><tr><td colspan="2"></td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>Jog</td></tr></table>	No	Data	1	17:07:58	2	I63 On			1	17:07:58	2	Jog
before 4.8.0	4.8.0~																	
I{ Num }={ Value }	I{ Num }={ Value }, { Comment }																	
No	Data																	
1	17:07:58																	
2	I63 On																	
1	17:07:58																	
2	Jog																	
C-bit	Display format is same as I-bit, only C0 (CycleStart), C1 (FeedHold), C36 (Emergency Stop) are recorded.	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>CycleStart On</td></tr></table>	No	Data	1	17:07:58	2	CycleStart On										
No	Data																	
1	17:07:58																	
2	CycleStart On																	

Data	Display Format	Example						
Parameter Input	Format: Param [parameter number] Modified.	<table><tr><td>No</td><td>Data</td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>Param3205Modified</td></tr></table>	No	Data	1	17:07:58	2	Param3205Modified
No	Data							
1	17:07:58							
2	Param3205Modified							
Tool Compensation Input	Format: [Tool number]. [Tool compensation form]([Axis number]). Note: Only the wear and tool length of lathe have axis number. The number is the axis of the controller parameters, not the line on the screen.	<table><tr><td>No</td><td>Data</td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>MillLength Geometry Modified</td></tr></table>	No	Data	1	17:07:58	2	MillLength Geometry Modified
No	Data							
1	17:07:58							
2	MillLength Geometry Modified							
Workpiece Input		<table><tr><td>No</td><td>Data</td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>G54Modified</td></tr></table>	No	Data	1	17:07:58	2	G54Modified
No	Data							
1	17:07:58							
2	G54Modified							
Key	Format: [key name]. Please refer to Operational Reader Keyboard Key Code Table for detailed key description.	<table><tr><td>No</td><td>Data</td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>Escape</td></tr></table>	No	Data	1	17:07:58	2	Escape
No	Data							
1	17:07:58							
2	Escape							

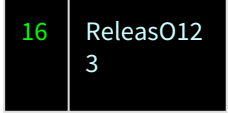
Data	Display Format	Example												
CE Human-Machine Action	The format is one of the following: 1. "[" CRC value of the Action name "]" 2. Action name defined in MMIActionTable.xml. If parameter 3251=0 (non-touch screen), only actions "Back to home screen, Program, Execute, Alarm, Parameter Setting, Diagnostics" will be recorded. If parameter 3251!=0 (touch screen), all actions will be recorded. Action Record S_MMach: Back to home screen S_MProg: Program S_MRun: Execute S_MAlarm: Alarm S_MParam: Parameter Setting S_MDiag: Diagnostics	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>[56337]</td></tr><tr><td colspan="2"></td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>S_MMach</td></tr></table>	No	Data	1	17:07:58	2	[56337]			1	17:07:58	2	S_MMach
No	Data													
1	17:07:58													
2	[56337]													
1	17:07:58													
2	S_MMach													
Home Searching	Triggering: • When C25~C28 and C230~C241 switches to On. • Display format: Same as IBit • When using the human-machine screen for serial absolute type home setting. • Format: AbsHome_Axis number. Available in controller versions 10.116.16H, 10.116.24A, OpLog Reader version 1.1.0.	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>C25 On</td></tr><tr><td colspan="2"></td></tr><tr><td>1</td><td>17:07:58</td></tr><tr><td>2</td><td>AbsHome 1</td></tr></table>	No	Data	1	17:07:58	2	C25 On			1	17:07:58	2	AbsHome 1
No	Data													
1	17:07:58													
2	C25 On													
1	17:07:58													
2	AbsHome 1													

Data	Display Format	Example										
User Change	There are two records for one login or logout: • One records the authority of login or logout. (corresponds R5997) • SyntecLogIn • MakerLogIn • AdminLogIn • OtherLogIn • LogOut • The other one records the user name. • Format: "User[CRC value of the user name]".	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>14:48:15</td></tr><tr><td>2</td><td>AdminLogIn</td></tr><tr><td>3</td><td>14:48:15</td></tr><tr><td>4</td><td>User16320</td></tr></table>	No	Data	1	14:48:15	2	AdminLogIn	3	14:48:15	4	User16320
No	Data											
1	14:48:15											
2	AdminLogIn											
3	14:48:15											
4	User16320											



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Data	Display Format	Example																																																										
ForceIO Action	• DisplayFormat: • Controller<table><tr><th>OPLog</th><th>Trigger recording conditions</th></tr><tr><td>EnterForceIO</td><td>Enter ForceIO mode</td></tr><tr><td>ExitForceIO</td><td>Exit ForceIO mode</td></tr><tr><td>{ I bit name } ForceOff</td><td>Using ForceIO function to force the I bit Off</td></tr><tr><td>{ I bit name } ForceOn</td><td>Using ForceIO function to force the I bit On</td></tr><tr><td>{ O bit name } ForceOff</td><td>Using ForceIO function to force the O bit Off</td></tr><tr><td>{ O bit name } ForceOn</td><td>Using ForceIO function to force the O bit On</td></tr><tr><td>Release{ I bit name }</td><td>Releasing the ForceIO state of I bit</td></tr><tr><td>Release{ O bit name }</td><td>Releasing the ForceIO state of O bit</td></tr></table> • OKLogReader<table><tr><th>3.6.0~4.8.0</th><th>4.8.0~</th></tr><tr><td>{ Ibit name }ForceOff</td><td rowspan="5">refer to PLC related records display</td></tr><tr><td>{ Ibit name }ForceOn</td></tr><tr><td>{ Obit name }ForceOff</td></tr><tr><td>{ Obit name }ForceOn</td></tr><tr><td>Release{ Ibit name }</td></tr></table>	OPLog	Trigger recording conditions	EnterForceIO	Enter ForceIO mode	ExitForceIO	Exit ForceIO mode	{ I bit name } ForceOff	Using ForceIO function to force the I bit Off	{ I bit name } ForceOn	Using ForceIO function to force the I bit On	{ O bit name } ForceOff	Using ForceIO function to force the O bit Off	{ O bit name } ForceOn	Using ForceIO function to force the O bit On	Release{ I bit name }	Releasing the ForceIO state of I bit	Release{ O bit name }	Releasing the ForceIO state of O bit	3.6.0~4.8.0	4.8.0~	{ Ibit name }ForceOff	refer to PLC related records display	{ Ibit name }ForceOn	{ Obit name }ForceOff	{ Obit name }ForceOn	Release{ Ibit name }	<table><tr><th>No</th><th>Data</th></tr><tr><td>1</td><td>14:48:15</td></tr><tr><td>2</td><td>EnterForce IO</td></tr><tr><td>3</td><td>14:48:15</td></tr><tr><td>4</td><td>ExitForce O</td></tr><tr><td>5</td><td>14:48:15</td></tr><tr><td>6</td><td>I123Force Off</td></tr><tr><td>7</td><td>14:48:15</td></tr><tr><td>8</td><td>I123Force On</td></tr><tr><td>9</td><td>14:48:15</td></tr><tr><td>10</td><td>O123Force Off</td></tr><tr><td>11</td><td>14:48:15</td></tr><tr><td>12</td><td>O123Force On</td></tr><tr><td>13</td><td>14:48:15</td></tr><tr><td>14</td><td>ReleasI123</td></tr><tr><td>15</td><td>14:48:15</td></tr></table>	No	Data	1	14:48:15	2	EnterForce IO	3	14:48:15	4	ExitForce O	5	14:48:15	6	I123Force Off	7	14:48:15	8	I123Force On	9	14:48:15	10	O123Force Off	11	14:48:15	12	O123Force On	13	14:48:15	14	ReleasI123	15	14:48:15
	OPLog	Trigger recording conditions																																																										
	EnterForceIO	Enter ForceIO mode																																																										
	ExitForceIO	Exit ForceIO mode																																																										
	{ I bit name } ForceOff	Using ForceIO function to force the I bit Off																																																										
	{ I bit name } ForceOn	Using ForceIO function to force the I bit On																																																										
	{ O bit name } ForceOff	Using ForceIO function to force the O bit Off																																																										
	{ O bit name } ForceOn	Using ForceIO function to force the O bit On																																																										
	Release{ I bit name }	Releasing the ForceIO state of I bit																																																										
	Release{ O bit name }	Releasing the ForceIO state of O bit																																																										
	3.6.0~4.8.0	4.8.0~																																																										
	{ Ibit name }ForceOff	refer to PLC related records display																																																										
	{ Ibit name }ForceOn																																																											
	{ Obit name }ForceOff																																																											
	{ Obit name }ForceOn																																																											
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	1	14:48:15																																																										
	2	EnterForce IO																																																										
	3	14:48:15																																																										
4	ExitForce O																																																											
5	14:48:15																																																											
6	I123Force Off																																																											
7	14:48:15																																																											
8	I123Force On																																																											
9	14:48:15																																																											
10	O123Force Off																																																											
11	14:48:15																																																											
12	O123Force On																																																											
13	14:48:15																																																											
14	ReleasI123																																																											
15	14:48:15																																																											

Data	Display Format		Example
		3.6.0~4.8.0	
		4.8.0~	
		Release{ Obit name }	
Available in controller versions: 10.118.32D, 10.118.40H, 10.118.45 or above.			

New Version [Old Version](#)

- Old version refers to versions other than the new versions.

Data	Display Format	Example
Boot	Record 3 records Including StartUp, Date, Time.	1. 17:07:58 2. 11/04/15 3. StartUp
Date	Font is Yellow. Format:[Year]/[Month]/[Day]	11/04/15
Time	Font is Yellow. Format:[Hour]/[Minute]/[Second]	17:07:58

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Data	Display Format	Example
Alarm	Font is red. Including Alarm info, Time. The alarm info contains [ClassID]/[AlarmID] + [ObjectID]. After version 4.9.0, if SI is enabled and a corresponding resmap file exists in the environment, an additional alarm string will be displayed. ClassID: COM: Syntax Compiler Alarm COR: Program Execute Error Alarm MAR: MACRO Alarm MOT: Axial Motion Alarm OP: Operation Alarm PLC: PLC Alarm PLCH: PLC Hint SPD: Spindle Alarm MSG: Macro Message SERVO: Servo Alarm M2Yas: M2 Yaskawa Alarm M2Syn: M2 SYNTEC Alarm M3Yas: M3 Yaskawa Alarm M3Syn: M3 SYNTEC Alarm SPLCA: Serial PLC Axis Alarm SRI: SRI Alarm BGND: Background Execute Alarm ROT: ROT Turret Alarm LASER: Laser Alarm ObjectID: Axis, the default value is 1. OKLogReader	1. 17:07:58 2. COR21

Data	Display Format		Example
	before 4.9.0	4.9.0~	
	[ClassID]/[AlarmID] + [ObjectID]	[ClassID]/[AlarmID] + [ObjectID] [alarm string] (start from SI and has multilingual files in MB/SB)	
PLC Bit (I-bit)	The format is one of the following: 1. [PLC Bit Name]_[on/off] 2. The name of the second panel keypad defined in LogTable		1. I63 On 2. Jog
C-bit	Same as I-bit, only C0 (CycleStart), C1 (FeedHold), C36 (Emergency Stop) are recorded.		1. CycleStart On
Parameter Input	Format: Param [parameter number] Modified.		1. Param3205 Modified
Tool Compensation Input	Format: [Tool number]. [Tool compensation form]([Axis number]). Note: Only the wear and tool length of lathe have axis number. The number is the axis of the controller parameters, not the line on the screen.		1. MillLength Geometry Modified
Workpiece Input			1. G54Modified
Key	Format: [key name]. Please refer to Operational Reader Keyboard Key Code Table for detailed key description.		1. Esc

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Data	Display Format	Example
CE Human-Machine Action	The format is one of the following: 1. "[" CRC value of the Action name "]" 2. Action name defined in MMIActionTable.xml. If parameter 3251=0 (non-touch screen), only actions "Back to home screen, Program, Execute, Alarm, Parameter Setting, Diagnostics" will be recorded. If parameter 3251!=0 (touch screen), all actions will be recorded. Action Record S_MMach: Back to home screen S_MProg: Program S_MRun: Execute S_MAlarm: Alarm S_MParam: Parameter Setting S_MDiag: Diagnostics	1. [56337] 2. S_MMach
Home Searching	Triggering: • When C25~C28 and C230~C241 switches to On, it will record the event and timestamp. • Format: "C bit name"_On. • When using the human-machine screen for serial absolute type home setting. • Format: AbsHome_Axis number. Available in controller versions 10.116.16H, 10.116.24A OpLog Reader version 1.1.0.	1. xx: xx: xx C25 On 2. xx: xx: xx AbsHome 1

1.1.5 Notes

1. PC simulator: Operation Log is currently not supported.
2. CE controller: Available in versions 10.115.29, 114.23 and above.
3. DOS controller: Available in versions 10.115.42, 114.37 and above.
4. The operation log reader can only be enabled on models supporting FRAM (models without FRAM: SUPER with PIO3/PIO4 or versions before PIO5 v5.5).
5. Please refer to the "Parameter Setting Instruction Manual" to set parameter 5 correctly. If it is set incorrectly, the operation log function will not be enabled properly.

1.1.6 Version Matching and Display Specifications

- Software compatibility is guaranteed whether you use a new version of OKLogReader with an older version of the controller or an older version of OKLogReader with a newer version of the controller.
- The display manners are listed below. We recommend using the new version of OKLogReader for better display friendliness.

Controller New Version

(10.118.24B, 10.118.25B, 10.118.280, 10.118.38 and above)

OKLogReader
New Version

(3.0.0 and above)

操作&監視記録閲覧装置 v2.5.0

検索 表示

Search Log

Controller SN : M9A0001

Controller Version : 1011802813

Total OPLog Count : 72880

1. It displays the old record first and then the new record.

2. The date, time, and operation are displayed in separate columns.

3. All operations will record time.

★ Index	Date	Time	OPLog	RawData
72807			Escape	0x0005001B
72808			StartUp	0x00020001
72809	2020/09/07	16:36:34	20/09/07	0x03140907
72810			MMISStartUp	0x10020000
72811			MOT11 1	0x0C02040B
72812			OP50 1	0x0C050432
72813			LogOut	0x003303E7
72814			User19890	0x00354DB2
72815	2020/09/07	16:36:43	20/09/07	0x03140907
72816			Escape	0x0005001B
72817			Escape	0x0005001B
72818			[S_MMach]	0x10050001
72819			Escape	0x0005001B
72820			[S_MMach]	0x10050001
72821			F8	0x00050077
72822			Escape	0x0005001B
72823			[S_MMach]	0x10050001
72824			Escape	0x0005001B
72825			[S_MMach]	0x10050001
72826			Escape	0x0005001B
72827			[S_MMach]	0x10050001
72828			F10	0x00050079
72829			F2	0x00050074

Controller Old Version

操作&監視記録閲覧装置 v2.5.0

検索 表示

Search Log

Controller SN : M9A0001

Controller Version : 1011802813

Total OPLog Count : 72880

1. It displays the old record first and then the new record.

2. The date, time, and operation are displayed in separate columns.

3. Only certain operations will record time.

★ Index	Date	Time	OPLog	RawData
0			StartUp	0x00020001
1	2020/02/03	15:17:54	20/02/03	0x03140203
2			StartUp	0x00020001
3	2020/02/03	15:24:00	20/02/03	0x03140203
4			MMISStartUp	0x10020000
5			OP22 1	0x0C050416
6			MOT16 1	0x0C020410
7			2064 17	0x0C05E4410
8			OP80 1	0x0C050450
9			LogOut	0x003303E7
10			User19890	0x00354DB2
11	2020/02/03	15:24:29	20/02/03	0x03140203
12			Escape	0x0005001B
13			Escape	0x0005001B
14			[S_MMach]	0x10050001
15			Escape	0x0005001B
16			[S_MMach]	0x10050001
17			Escape	0x0005001B
18			[S_MMach]	0x10050001
19			Escape	0x0005001B
20			[S_MMach]	0x10050001
21			Escape	0x0005001B
22			[S_MMach]	0x10050001

OKLogReader
Old Version

操作&監視記録閲覧装置 v2.5.0

Open File

Search Log

Controller SN : M9A0001

Controller Version : 1011802813

Total OPLog Count : 78907

1. It displays the new record first and then the old record.

2. The date, time, and operation are displayed in separate columns.

3. All operations will record time.

★ Index	OPLog	RowData
117	F8	0x00050077
118	16:37:06	0x04061025
119	[S_MMach]	0x10050001
120	16:37:06	0x04061025
121	Escape	0x0005001B
122	16:37:06	0x04061025
123	[S_MMach]	0x10050001
124	16:37:06	0x04061025
125	Escape	0x0005001B
126	16:37:06	0x04061025
127	Escape	0x0005001B
128	16:36:43	0x042B1024
129	20/09/07	0x03140907
130	16:36:43	0x042B1024
131	User19890	0x00354DB2
132	16:36:43	0x042B1024
133	LogOut	0x003303E7
134	16:36:41	0x04291024
135	OP50 1	0x0C050432
136	16:36:39	0x04271024
137	MOT11 1	0x0C02040B
138	16:36:37	0x04251024
139	MMISStartUp	0x10020000
140	16:36:34	0x04221024
141	20/09/07	0x03140907
142	16:36:34	0x04221024

Controller Old Version

操作&監視記録閲覧装置 v2.5.0

Open File

Search Log

Controller SN : M9A0001

Controller Version : 1011802813

Total OPLog Count : 78907

1. It displays the new record first and then the old record.

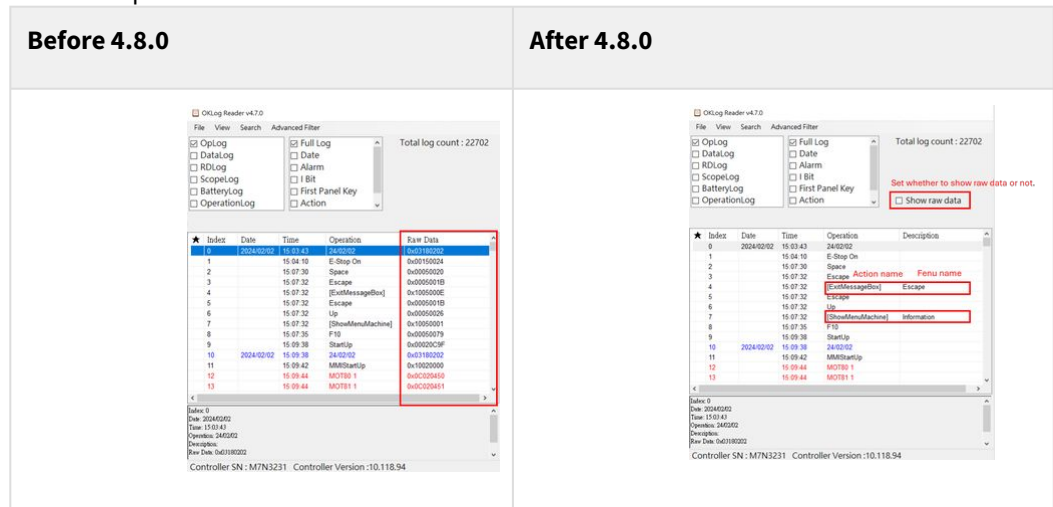
2. The date, time, and operation are displayed in separate columns.

3. Only certain operations will record time.

★ Index	OPLog	RowData
6289	F5	0x00050074
6290	[S_MParam]	0x10050006
6291	F3	0x00050072
6292	F10	0x00050079
6293	[S_MMach]	0x10050001
6294	Escape	0x0005001B
6295	[S_MMach]	0x10050001
6296	Escape	0x0005001B
6297	[S_MMach]	0x10050001
6298	Escape	0x0005001B
6299	Escape	0x0005001B
6300	08:58:37	0x0425083A
6301	20/08/05	0x03140805
6302	User19890	0x00354DB2
6303	LogOut	0x003303E7
6304	08:58:33	0x0421083A
6305	MOT11 1	0x0C02040B
6306	MMISStartUp	0x10020000
6307	08:58:28	0x041C083A
6308	20/08/05	0x03140805
6309	StartUp	0x00020001
6310	[S_MMach]	0x10050001
6311	Escape	0x0005001B
6312	[S_MMach]	0x10050001
6313	Escape	0x0005001B
6314	[S_MMach]	0x10050001

- After OKLogReader version 4.8.0:
 - Action related records display

- The 'Description' column was added and the 'Raw data' column was hidden.:

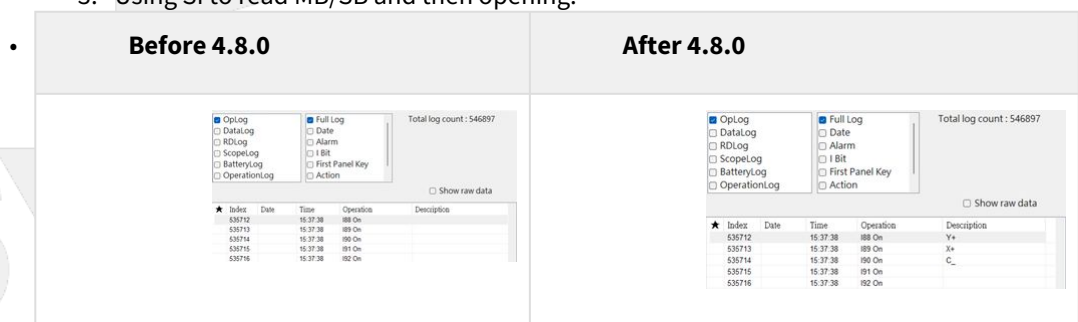


The action names and menu names need standard environment data to be displayed.

You need to load MB/SB through SI and download the standard environment data, then open OKLogReader to see the information above.

For more details: Syntec IDE Operation Manual. > SI Operation steps

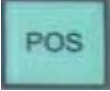
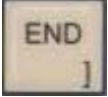
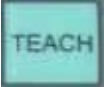
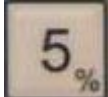
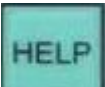
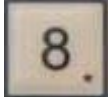
- PLC related records display
 - When displaying PLC related operation records, if the user has defined short comments in lad file, display them after the data.
 - IBit On/Off
 - Specific Cbit On (C25~C28、C230~C241)
 - ForceIO On/Off/Release
 - The short comments will only be displayed in the OKLogReader under the following scenarios:
 - Opening MB, and the target MB contains a backup ladder (cnc.lad).
 - Opening SB.
 - Using SI to read MB/SB and then opening.



1.1.7 Operational Reader Keyboard Key Code Table

[常用面板Key Code](#) Key Code总表

Often-used screen Key Code table

Screen button	Key Code		Screen button	Key Code		Screen button	Key Code
	CNCPosition			Home			0
	CNCProgram			End			1
	CNCGraphTeach			BackSpace			2
	CNCMonitor			Insert			3
	CNCAlarm			Delete			4
	CNCGraphTeach			PageUp			5
	CNCHelp			PageDown			6
	CNCReset			Space			7
	Add / +			Enter			8

Screen button	Key Code		Screen button	Key Code		Screen button	Key Code
	Substract / -			Up			9
	\			Down			.
	;			Left			Divde or /
	,			Right		A~Z键	A~Z



常用面板Key Code [Key Code总表](#)

下表为目前会显示支援的OPLog键盘Key值

Below table is the current supported OPLog keyboard Key value

V a l u e	Name	instr uctio n	V a l u e	Na me	说明	V a l u e	Name	说明	V a l u e	Name	说明
0	None	No butto n is press ed	6 5	A	A	1 3 0	F19	F19	1 9 5		
1	LButto n	Left click of mous e	6 6	B	B	1 3 1	F20	F20	1 9 6		
2	RButto n	Right click of mous e	6 7	C	C	1 3 2	F21	F21	1 9 7		
3	Cancel	CANC EL	6 8	D	D	1 3 3	F22	F22	1 9 8		
4	MButto n	Middl e click of mous e(thr ee- butto n mous e)	6 9	E	E	1 3 4	F23	F23	1 9 9		

5	XButton1	First X click of mouse(five-button mouse)	70	F	F	135	F24	F24	200		
6	XButton2	Second X click of mouse(five-button mouse)	71	G	G	136			201		
7			72	H	H	137			202		
8	BackSpace	BACKSPACE	73	I	I	138			203		
9	Tab	TAB	74	J	J	139			204		
10	LineFeed	LINEFEED	75	K	K	140			205		
11			76	L	L	141			206		
12	Clear	CLEAR	77	M	M	142			207		

1 3	Enter	ENTER	7 8	N	N	1 4 3			2 0 8		
	Return	RETURN									
1 4			7 9	O	O	1 4 4	NumLock	NUM LOCK	2 0 9		
1 5			8 0	P	P	1 4 5	Scroll	SCROLL LOCK	2 1 0		
1 6	ShiftKey	SHIFT	8 1	Q	Q	1 4 6			2 1 1		
1 7	Control Key	CTRL	8 2	R	R	1 4 7			2 1 2		
1 8	Menu	ALT	8 3	S	S	1 4 8			2 1 3		
1 9	Pause	PAUSE	8 4	T	T	1 4 9			2 1 4		
2 0	CapsLock	CAPS LOCK	8 5	U	U	1 5 0			2 1 5		
	Capital										
2 1	KanaMode	IME Kana mode key	8 6	V	V	1 5 1			2 1 6		

	Hangu elMode	IME Hang uel mode key											
	Hangul Mode	IME Hang ul mode key											
2 2			8 7	W	W	1 5 2				2 1 7			
2 3	JunjaM ode	IME Junja mode key	8 8	X	X	1 5 3				2 1 8			
2 4	FinalM ode	IME final mode key	8 9	Y	Y	1 5 4				2 1 9	Oem4	OEM 4 key	
											OemOp enBrack ets	OEM open bracket key on a US standar d keyboar d	
2 5	KanjiM ode	IME Kanji mode key	9 0	Z	Z	1 5 5				2 2 0	Oem5	OEM 5 key	

30	IMEAccept	IME accept key	95	Sleep	computer sleep key	160	LShiftKey	left SHIFT	225		
31	IMEModeChange	IME mode change key	96	NumPad0	Number Pad 0	161	RShiftKey	right SHIFT	226	Oem102	OEM 102 key
										OemBackslash	OEM angle bracket or backslash key on the RT 102 key keyboard
32	Space	SPACEBAR	97	NumPad1	Number Pad 1	162	LControlKey	left CTRL	227		
33	PageUp	PAGE UP	98	NumPad2	Number Pad 2	163	RControlKey	right CTRL	228		
34	PageDown	PAGE DOWN	99	NumPad3	Number Pad 3	164	LMenu	left ALT	229	Process Key	PROCESS KEY
35	End	END	100	NumPad4	Number Pad 4	165	RMenu	right ALT	230		
36	Home	HOME	101	NumPad5	Number Pad 5	166	Browser Back	browser back key	231		

37	Left	LEFT ARROW	102	Numpad6	Number Pad 6	167	Browser Forward	browser forward key	232		
38	Up	UP ARROW	103	Numpad7	Number Pad 7	168	Browser Refresh	browser refresh key	233	CNCReset	CNC Reset
39	Right	RIGHT ARROW	104	Numpad8	Number Pad 8	169	Browser Stop	browser stop key	234	CNCPosition	CNC Position
40	Down	DOWN ARROW	105	Numpad9	Number Pad 9	170	Browser Search	browser search key	235	CNCProgram	CNC Program
41	Select	SELECT	106	Multiply	*	171	Browser Favorites	browser favorites key	236	CNCGraphTeach	CNC GraphTeach
42	Print	PRINT	107	Add	+	172	Browser Home	browser home key	237	CNCMonitor	CNC Monitor
43	Execute	EXECUTE	108	Separator	separator key	173	Volume Mute	volume mute key	238	CNCHelp	CNC Help
44	PrintScreen Snapshot	PRINT SCREEN	109	Subtract	-	174	Volume Down	volume down key	239	CNCAlarm	CNC Alarm
45	Insert	INSERT	110	Decimal	decimal key	175	Volume Up	volume up key	240	CNCGuidance	CNC Guidance
46	Delete	DEL	111	Divide	/	176	MediaNextTrack	media next track key	241	CNCDiagnosis	CNC Diagnosis

47	Help	HELP	112	F1	F1	177	MediaPreviousTrack	media previous track key	242	CNCParameter	CNC Parameter
48	D0	0	113	F2	F2	178	MediaStop	media Stop key	243	CNCTable	CNC Table
49	D1	1	114	F3	F3	179	MediaPlayPause	media play pause key	244		
50	D2	2	115	F4	F4	180	LaunchMail	launch mail key	245		
51	D3	3	116	F5	F5	181	SelectMedia	select media key	246	Attn	ATTN
52	D4	4	117	F6	F6	182	LaunchApplication1	start application one key	247	Crssel	CRSEL
53	D5	5	118	F7	F7	183	LaunchApplication2	start application two key	248	Exsel	EXSEL
54	D6	6	119	F8	F8	184			249	EraseEOF	ERASR EOF
55	D7	7	120	F9	F9	185			250	Play	PLAY
56	D8	8	121	F10	F10	186	Oem1	OEM 1 key	251	Zoom	ZOOM
							OemSemicolon	OEM Semicolon key on a US standard keyboard			

57	D9	9	122	F11	F11	187	Oemplus	OEM plus key on any country/region keyboard	252	NoName	A constant reserved for future use
58			123	F12	F12	188	Oemcomma	OEM comma key on any country/region keyboard	253	Pa1	PA1
59			124	F13	F13	189	OemMinus	OEM minus key on any country/region keyboard	254	OemClear	CLEAR
60			125	F14	F14	190	OemPeriod	OEM period key on any country/region keyboard	255		
61			126	F15	F15	191	Oem2	OEM 2 key	0X1000	Shift	SHIFT modifier key
							OemQuestion	OEM question mark key on a US standard keyboard			
62			127	F16	F16	192	Oem3	OEM 3 key	0X2000	Control	CTRL modifier key
							OemTilde	OEM tilde key on a US standard keyboard			

6 3			1 2 8	F17	F17	1 9 3			0 X 4 0 0	Alt	ALT modifie r key
6 4			1 2 9	F18	F18	1 9 4					

1.2 Data Log Reader Operation Manual

1.2.1 How and When to Use

The purpose of the data log reader is to complement the operation log reader (OPLOG) in the interpretation of abnormality detection.

For example, when the program starts to process, the data log reader will automatically record the current machine coordinate and start line no. etc. This allows analysts to have a better grasp of the abnormal situation.

P.S. This feature supports version 10.116.10x or above.

1.2.2 Notes

1. The data is constantly captured, but the frequency of writing into DataLog.dat is every 10 minutes or as soon as a MOT alarm is triggered.
2. The current data log reader is optimized for storage capacity for 3 days.
 - a. OKLogReader, which is window edition, can interpret the new format (corresponding to controller versions 10.116.16 and above).
 - b. TransferDataRecords v1.x, which is console edition, can interpret the old format (corresponding to the controller version below 10.116.16).
3. The events defined by the data log reader are not always issued when the state has changed, some are detected every once in a while. The main categories are as follows.
 - a. Fixed time (before ID6): For example, ID6 (1sec in CS) will record the coordinate every 1000 ms.
 - b. PLC signal (ID7~18): For example, ID17 (Specified R On) is issued when PLC scan time (or FastPLC scan time) detects that R value changes.
 - c. Processing status (ID21~25): For example, ID21 (ReadyToCS) is issued when the controller status has changed from ready to processing during OpScan (executed every 100ms).
 - d. Real-time events (after ID26): For example, ID27 (Home) is issued when the controller is ready for home searching.

1.2.3 **How to Export Records**

To export the records, you need to use the data backup function (only Machine Backup (MB) provides this record). After decompressing the backup data exported from the controller, the DataLog0.dat or DataLog1.dat in the DataLog folder will be the records of the data log reader.

The data backup path for each controller model is as follows.

1. ARM system (6/11/21)
 - 8 key: F5 Maintain > F6 Backup Sys.
 - 5 key: F5 Maintain > F10 Next > F1 Backup Sys.
2. x86 system (SUPER/10/20)
 - 8 key: F7 Diag. > F8 System manager > F2 Backup Sys.
 - 5 key: F10 next > F2 Diag. > F10 next > F5 System manager > F2 Backup Sys.

1.2.4 **Operation method**

Controller Software Version after 10.116.16

Controller Software Version before 10.116.16

i Download

- Please go to SYNTEC official website → Downloads → Application Tool, and download "OKLogReader_[V].zip".

i Examples

- KLog-Find Information on Specific Date
 - a. Select "1st item of the DAY" in the filter criteria, then the first information of each day will be listed.

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- b. Click on the row in the right list, the left list will switch to the same row as well.
Since the left list shows all the information, you can see all the information on that date.

操作&監視記錄擧覽器 v2.6.0

Open File

☐ Full Log
☐ Machine Pos
☐ NO Machine Pos
☒ 1st item of the DAY
☐ 1st item of the EVENT
☐ ★Bookmark
☐ Debug Event

Index	Day	Time	Event	Argument
2056	2020/06/18	18:28:53.523	Axis Feedba...	軸型態NormalAxis, 軸1, 回授位置異常次...
2057	2020/06/18	18:29:08.784	System Com...	診斷變數 D336=56, D337=83, D378=0, D379=...
2058	2020/06/18	18:36:06.000	SystemBoot	
2059	2020/06/18	18:36:06.666	MOT Alarm	軸1, 索引訊號數0
2060	2020/06/18	18:36:06.804	System Com...	診斷變數 D336=16, D337=64, D378=0, D379=...
2061	2020/06/18	18:40:02.000	SystemBoot	
2062	2020/06/18	18:40:02.714	MOT Alarm	軸1, 索引訊號數0
2063	2020/06/18	18:40:02.852	System Com...	診斷變數 D336=17, D337=65, D378=0, D379=...
2064	2020/06/19	09:11:46.000	SystemBoot	
2065	2020/06/19	09:11:46.669	MOT Alarm	軸1, 索引訊號數0
2066	2020/06/19	09:11:46.810	System Com...	診斷變數 D336=16, D337=65, D378=0, D379=...
2067	2020/06/19	09:21:34.570	SystemRunn...	
2068	2020/06/19	09:22:09.343	Axis Feedba...	軸型態NormalAxis, 軸1, 回授位置異常次...
2069	2020/06/19	09:22:24.202	System Com...	診斷變數 D336=32, D337=82, D378=0, D379=...
2070	2020/06/19	09:31:35.308	SystemRunn...	
2071	2020/06/19	09:32:46.684	Axis Feedba...	軸型態NormalAxis, 軸1, 回授位置異常次...
2072	2020/06/19	09:33:01.594	System Com...	診斷變數 D336=51, D337=83, D378=0, D379=...

Index	Day	Time	Event	Argument
996	2020/06/04	11:32:12.000	SystemBoot	
1117	2020/06/09	10:20:22.000	SystemBoot	
1273	2020/06/10	11:15:56.000	SystemBoot	
1316	2020/06/11	17:55:13.000	SystemBoot	
1339	2020/06/15	12:06:17.000	SystemBoot	
1464	2020/06/16	10:06:13.000	SystemBoot	
1689	2020/06/17	10:51:53.000	SystemBoot	
1818	2020/06/18	08:55:16.000	SystemBoot	
2064	2020/06/19	09:11:46.000	SystemBoot	
2323	2020/06/20	00:04:24.794	SystemRunn...	
2739	2020/06/21	00:06:09.992	SystemRunn...	
3153	2020/06/22	00:04:32.153	Axis Feedba...	軸型態NormalA
3549	2020/06/23	10:00:29.000	SystemBoot	
3672	2020/06/24	10:16:48.000	SystemBoot	
3730	2020/06/30	10:05:05.000	SystemBoot	
42767	2020/07/01	00:04:51.549	SystemRunn...	
43226	2020/07/02	00:04:35.943	SystemRunn...	

• KLog-Find Event

- An Event will usually contain multiple Arguments. If you want to sort by event, follow these steps:
 - Select "1st item of the EVENT" in the filter criteria, then the first information of each event will be listed.
 - Click on the row in the right list, the left list will switch to the same row as well.
- Since the left list shows all the information, you can see all the information of that event.

操作&監視記錄擧覽器 v2.6.0

Open File

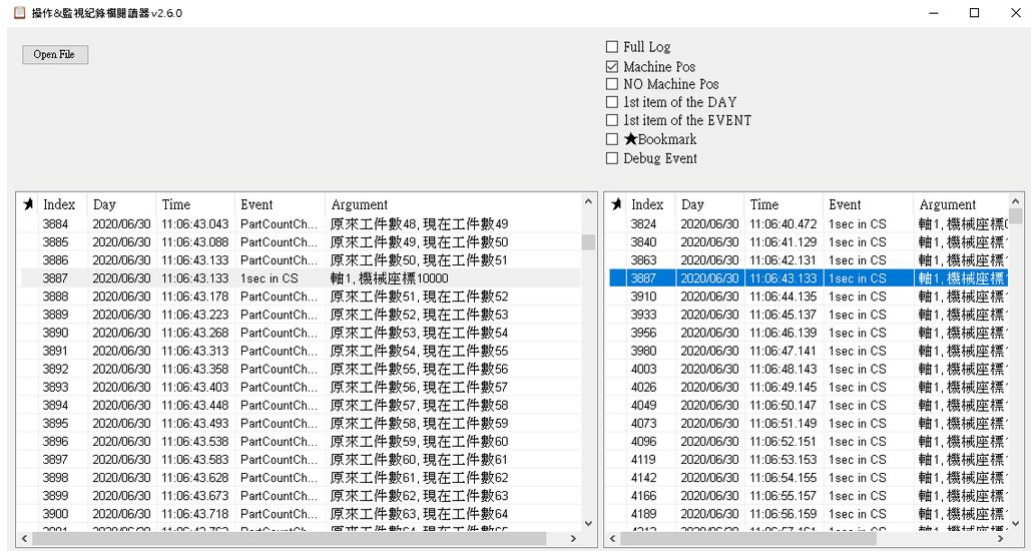
☐ Full Log
☐ Machine Pos
☐ NO Machine Pos
☐ 1st item of the DAY
☒ 1st item of the EVENT
☐ ★Bookmark
☐ Debug Event

Index	Day	Time	Event	Argument
1	2020/05/21	11:57:26.800	CNCStateCh...	原來狀態未就緒, 現在狀態就緒
2	2020/05/21	11:57:26.800	ToReady	軸1, 機械座標0
3	2020/05/21		ToReady	軸群1, 工件座標系1, 軸1, G54偏移量0
4	2020/05/21		ToReady	軸群1, 軸1, 外偏置0
5	2020/05/21		ToReady	軸群1, 軸1, G92偏移量0
6	2020/05/21		ToReady	軸群1, 軸1, 手輪座標0
7	2020/05/21		ToReady	軸1, 馬達回授0
8	2020/05/21	12:07:11.808	SystemRunn...	
9	2020/05/21	12:07:46.470	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
10	2020/05/21	12:07:46.470	Axis Feedba...	軸型態NormalAxis, 軸1, 回授位置異常次...
11	2020/05/21	12:17:12.552	SystemRunn...	
12	2020/05/21	12:18:23.626	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
13	2020/05/21	12:18:23.626	Axis Feedba...	軸型態NormalAxis, 軸1, 回授位置異常次...
14	2020/05/21	12:27:13.276	SystemRunn...	
15	2020/05/21	12:29:00.888	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
16	2020/05/21	12:29:00.890	Axis Feedba...	軸型態NormalAxis, 軸1, 回授位置異常次...
17	2020/05/21	12:37:13.984	SystemRunn...	
18	2020/05/21	12:39:38.144	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
19	2020/05/21	12:39:38.144	Axis Feedba...	軸型態NormalA
20	2020/05/21	12:47:14.676	SystemRunn...	
21	2020/05/21	12:50:15.416	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...

Index	Day	Time	Event	Argument
0	2020/05/21	11:57:26.000	SystemBoot	
1	2020/05/21	11:57:26.800	CNCStateCh...	原來狀態未就緒, 現在狀態就緒
2	2020/05/21	11:57:26.800	ToReady	軸1, 機械座標0
8	2020/05/21	12:07:11.808	SystemRunn...	
9	2020/05/21	12:07:46.470	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
10	2020/05/21	12:07:46.470	Axis Feedba...	軸型態NormalA
11	2020/05/21	12:17:12.552	SystemRunn...	
12	2020/05/21	12:18:23.626	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
13	2020/05/21	12:18:23.626	Axis Feedba...	軸型態NormalA
14	2020/05/21	12:27:13.276	SystemRunn...	
15	2020/05/21	12:29:00.888	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
16	2020/05/21	12:29:00.890	Axis Feedba...	軸型態NormalA
17	2020/05/21	12:37:13.984	SystemRunn...	
18	2020/05/21	12:39:38.144	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...
19	2020/05/21	12:39:38.144	Axis Feedba...	軸型態NormalA
20	2020/05/21	12:47:14.676	SystemRunn...	
21	2020/05/21	12:50:15.416	System Com...	診斷變數 D336=47, D337=112, D378=0, D379=...

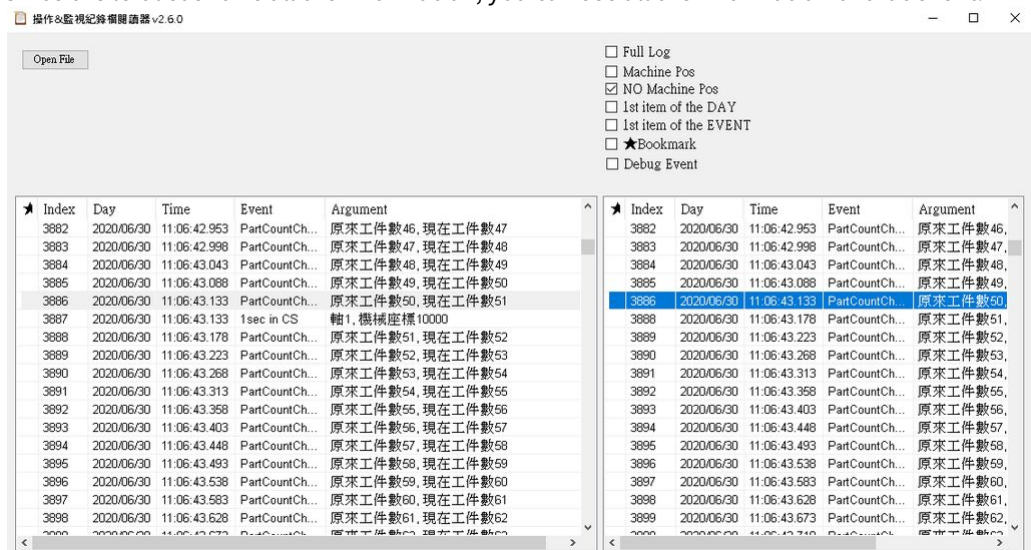
• KLog-Find Only the Coordinate in Processing

- Select "Machine Pos" in the filter criteria, then the first information of each event will be listed.
- Click on the row in the right list, the left list will switch to the same row as well. Since the left list shows all the information, you can see all the information of that event.



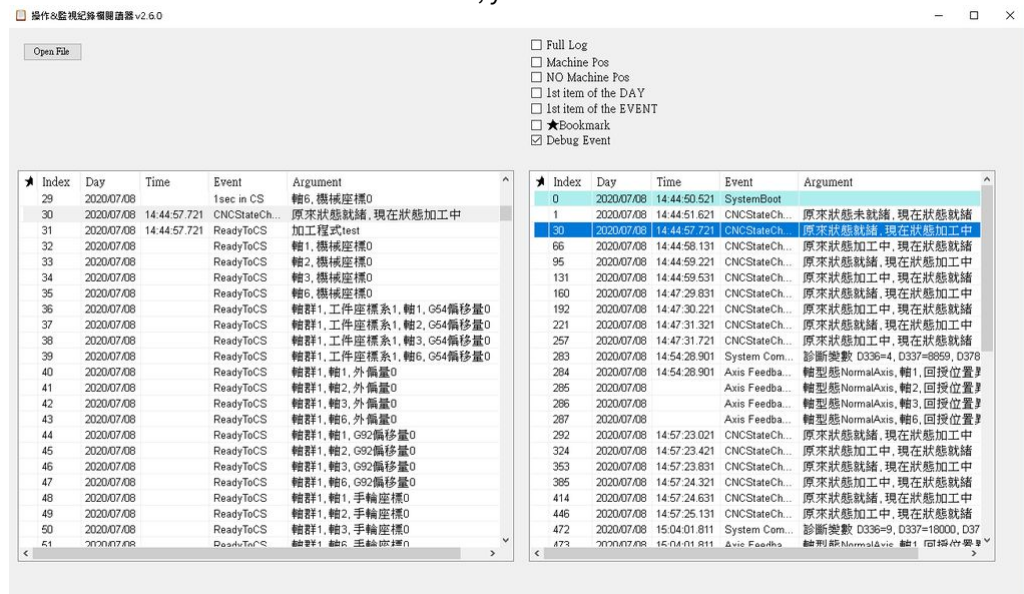
• KLog-Find Event without Coordinates in Processing

- Select "NO Machine Pos" in the filter criteria, then the first information of each event will be listed.
- Click on the row in the right list, the left list will switch to the same row as well. Since the left list shows all the information, you can see all the information of that event.



• KLog-Find Debug Event

- Available in OKLogReader version 2.6.0 and above.
 - Select "Debug Event" in the filter criteria, then it will show the debug events only.
 - Click on the row in the right list, the left list will switch to the same row as well.
- Since the left list shows all the information, you can see all the information of that event.



Controller Software Version after 10.116.16

Controller Software Version before 10.116.16

Download

Index	Version	File	Upload Date	Modifications	Uploader
Console version, for controller software version below 10.116.16.					
3	v1.2	TransferDataRecords	2015/07/31	Fixed the problem that could not be executed on some clean computers.	郑礼芳
2	v1.1	TransferDataRecords	2015/04/27	Fixed the problem that v 1.0 cannot open files.	谢旻翰

Index	Version	File	Upload Date	Modifications	Uploader
1	v1.0	TransferDataRecords	2015/02/03	Added v 1.0 file converter.	陈丁铨

File Interpretation

- Put the record and the converter into the same folder (please download the converter from the "Development File Download" section), and execute the converter. Then type in that folder path, and press enter to start the conversion. You can see the text file **DataRecord.txt** in the folder after it is finished.

Content Descriptions

- There are five kinds of retrieved data separated by commas. And each line represents a separate piece of information. The format is shown below. And the following section will explain the content of each category.
 - Event time: The event time obtained by OKLogReader, which is the same as the time reported by the client regardless of the time zone where the OKLogReader and the controller is located.
 - Event ID: The status of the controller at that moment, from which you can understand what the machine is doing at that time.
 - Data Type: The type of data, so that you can determine what kind of data it is.
 - Data content: The recorded data.

Date, Time

```

2015/7/22/23:56:54.600;6,0,1,2000
2015/7/22/23:56:54.600;6,0,2,3 — Event ID : compared to table, it means the state of "Not ready to ready"
2015/7/22/23:56:54.600;6,0,3,4 — Event ID : compared to table, it means "Axis ID, coordinate value"
2015/7/22/23:56:54.600;6,0,6,5000 — Axis ID
2015/7/22/23:56:54.990;6,0,1,1000 — Coordinate value
2015/7/22/23:56:54.990;6,0,2,1
2015/7/22/23:56:54.990;6,0,3,1
2015/7/22/23:56:54.990;6,0,6,1000
2015/7/22/23:56:55.600;20,0,1,2000
2015/7/22/23:56:55.600;20,0,2,3
2015/7/22/23:56:55.600;20,0,3,4
2015/7/22/23:56:55.600;20,0,6,5000
2015/7/22/23:56:55.600;20,1,1,1,1,0

```

Event List

Event ID	Event Description	Data ID	Information of the Log Record:				
			The record time is required and the K-log reader will display it at the beginning of the line.				
6	1sec in CS: every 1000 ms in processing.	0	Axis ID	Machine Coordinate			
11	Specified C On: when C54 turns from off to on.	25	The Specified C	Value after Change			
12	Specified C Off: when C54 turns from on to off.	25	The Specified C	Value after Change			
17	Specified R On: when the following R are changed and not 0. R520, R530, R540, R600, R609, R612, R613, R901~R916	25	The Specified R	Value after Change			
18	Specified R Off: when the following R are changed to 0. R520, R530, R540, R600, R609, R612, R613, R901~R916	25	The Specified R	Value after Change			
19	CNC State Changed	41	Original State Current State				

Event ID	Event Description	Data ID	Information of the Log Record: The record time is required and the K-log reader will display it at the beginning of the line.				
20	Not Ready To Ready	0	Axis ID	Machine Coordinate			
		1	Axis group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
21	Ready To Cycle start	42	Processing Program				
		0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		

Event ID	Event Description	Data ID	Information of the Log Record:				
			The record time is required and the K-log reader will display it at the beginning of the line.				
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
22	To Feedhold	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
23	Feedhold To Cycle start	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		

Event ID	Event Description	Data ID	Information of the Log Record: The record time is required and the K-log reader will display it at the beginning of the line.				
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
24	To B Stop	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
25	BStop To Cycle start	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	

Event ID	Event Description	Data ID	Information of the Log Record:				
			The record time is required and the K-log reader will display it at the beginning of the line.				
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
26	MOT Alarm	9	Axis ID	Index Count			
27	Home	8	Axis ID	Index Count	Number of Grid		
28	G54 Change	1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
29	G54 Setting	1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
30	G92 Setting	3	Axis Group ID	Axis ID	G92 offset		
31	External Offset Setting	2	Axis Group ID	Axis ID	External Offset		
32	Tool Length Setting	10	Axis Group ID	Tool No.	Axis ID	Tool Length	Wear
33	Tool No Change	10	Axis Group ID	Tool No.	Axis ID	Tool Length	Wear

Event ID	Event Description	Data ID	Information of the Log Record:				
			The record time is required and the K-log reader will display it at the beginning of the line.				
34	Enabled HCS	4	Axis Group ID	Axis ID	MPG Coordinate		
35	Disabled HCS	4	Axis Group ID	Axis ID	MPG Coordinate		
36	Set HCS	5	Axis Group ID	Axis ID	Setting Value		
37	PLC Axis Execute						
38	PLC Axis Move To						
92	Part Count Changed	43	Original Part Count Current Part Count				
93	System Boot	6					
94	System Running	6					
95	Ready To Execute Block	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		

Event ID	Event Description	Data ID	Information of the Log Record: The record time is required and the K-log reader will display it at the beginning of the line.				
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
96	FeedHold To Execute Block	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
97	B Stop To Execute Block	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	

Event ID	Event Description	Data ID	Information of the Log Record:				
			The record time is required and the K-log reader will display it at the beginning of the line.				
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			
98	On Advanced Look-Ahead	0	Axis ID	Machine Coordinate			
		1	Axis Group ID	Workpiece Coordinate	Axis ID	G54 Offset	
		2	Axis Group ID	Axis ID	External Offset		
		3	Axis Group ID	Axis ID	G92 Offset		
		4	Axis Group ID	Axis ID	MPG Coordinate		
		7	Axis ID	Motor Feedback			

Notes:

1. Axis group ID will display the data of the corresponding number and ID according to the "number of enabled axis group".
2. Axis ID will display the data of the corresponding number and ID according to the "number of enabled axis".
3. The unit of coordinates is "BLU".

Examples

Here are several examples to explain the meaning of the data. For detailed definition of the data, please refer to the table "**Time and Data Recorded by the Data Log Reader**".

- 2014/2/5/20:0:29.479;21,0,2,-15804
Red: 8:00 p.m. 29.479 seconds, February 5, 2014.
Blue: the event ID is 21, which means to start processing.
Green : the data type is 0, which means the following data are "Axis ID, Coordinate".
- 2014/2/5/20:0:29.479;21,0,2,-15804
Red: the data type is 0, which means the following data are "Axis ID, Machine Coordinate".
Blue: the axis name 2 represents Y-axis, and the machine coordinate is -15.804.
- 2014/2/5/20:0:29.479;21,1,1,1,0
Red: the data type is 1, which means the following data are "Axis Group, Workpiece Coordinate, Axis ID, G54 Setting Value".
Blue: they are the 1st axis group, the 1st Workpiece coordinate, X-Axis, and setting value is 0.
- 2014/2/5/20:0:29.479;21,2,1,1,50000
Red: the data type is 2, which means the following data are "Axis Group, Axis ID, External Offset".
Blue: they are the 1st axis group, X-Axis, and external offset is 50.
- 2014/2/5/20:0:29.479;21,1,1,1,0
Red: the data type is 1, which means the following data are "Axis Group, Workpiece Coordinate, Axis ID, G54 Setting Value".
Blue: they are the 1st axis group, the 1st Workpiece coordinate, X-Axis, and setting value is 0.
- 2014/2/5/20:0:29.479;21,7,2,-15804
Red: the data type is 7, which means the following data are "Axis ID, Motor Feedback".
Blue: the axis name 2 represents Y-axis, and motor feedback is -15.80.
- 2014/2/5/20:0:29.479; 30,3,1,1,50
Red: the event ID is 30, which means G92 Setting.
Blue: the data type is 3, which means the following data are "Axis Group, Axis ID, G92 Offset".
Green: they are the 1st axis group, X-Axis, and offset is 0.05.

1.2.5 QA

Q1. Why does the time displayed differ from the one in controller alarm history or operation log when reading DataLog*.dat with a data log reader (hereinafter called Reader), such as "TransferDataRecords v2.1" or "OKLogReader_2.0.2"?

A1: There is a time zone difference between each controller software version and Reader. The following table shows the relationship between each version.

Type	Controller version			
A	10.116.6D ~ 10.116.10A ~ 10.116.16A ~ 10.116.24A ~ 10.116.24L			
B	10.116.24M ~ 10.116.38A ~ 10.116.38F 10.116.54A ~ 10.116.54D 10.118.0A ~10.118.0B			
C	10.116.38G ~ 10.116.54E ~ 10.118.0C ~			
	Controller Display Time (Machine)	Data Log Reader Recording Time (Machine)	Old Reader Display Time (User PC)	New Reader Display Time (User PC)
Time zone	When the controller is rolled out, it is set to Taiwan time zone UTC+8 which users cannot change.		Suppose the computer using Reader is in Taiwan, the time zone is UTC+8.	
A	02:00	02:00	10:00 (8 hours ahead)	02:00 (Correct)
B		10:00	18:00 (16 hours ahead)	10:00 (8 hours ahead)
C		02:00	10:00 (8 hours ahead)	02:00 (Correct)
Type	Using Reader "TransferDataRecords v2.1" or "OKLogReader_2.0.2"		Using Reader "OKLogReader_2.0.3"	

A	When the time zone of Reader's computer is UTC+N, the display time will be "N hours ahead" of the time recorded by the machine. E.g. The same DataLog0~2.dat is 8 hours ahead of the machine recorded time in Taiwan and 5 hours behind in New York. Because the time zone of Taiwan is UTC+8, and New York is UTC-5. Related issue ISSUE-1493	When the time zone of Reader's computer is UTC+N, the display time will be identical to the time recorded by the machine. E.g. The DataLog0~2.dat will display the same time with the machine recorded time regardless of the time zone. Related issue MMI-3310
B	When the time zone of Reader's computer is UTC+N, the display time will be "8+N hours ahead" of the time recorded by the machine. E.g. The same DataLog0~2.dat is 16 hours ahead of the machine recorded time in Taiwan and 3 hours ahead in New York. Because the time zone of Taiwan is UTC+8, and New York is UTC-5. Related issue ISSUE-7228	When the time zone of Reader's computer is UTC+N, the display time will be "N hours ahead" of the time recorded by the machine. E.g. The same DataLog0~2.dat is 8 hours ahead of the machine recorded time in Taiwan and 5 hours behind in New York. Because the time zone of Taiwan is UTC+8, and New York is UTC-5. Related issue MMI-3310
C	When the time zone of Reader's computer is UTC+N, the display time will be "N hours ahead" of the time recorded by the machine. E.g. The same DataLog0~2.dat is 8 hours ahead of the machine recorded time in Taiwan and 5 hours behind in New York. Because the time zone of Taiwan is UTC+8, and New York is UTC-5. Related issue ISSUE-11215	When the time zone of Reader's computer is UTC+N, the display time will be identical to the time recorded by the machine. E.g. The DataLog0~2.dat will display the same time with the machine recorded time regardless of the time zone. Related issue MMI-3310

Q2. Why is the DataLog*.dat which is backed up with the latest controller software version 10.116.24 not updated or empty?

A2:

- The data log reader function is disabled in versions 10.116.16K (inclusive) ~ 10.116.24/10.116.26.
- It is re-enabled after 10.116.36, and the specification of machine coordinate record in processing is changed from writing every second to writing once every 10 minutes. And if an MOT alarm is triggered during the 10-minute period, it will compulsorily write the data to ensure that important information is recorded.

1.3 IOLog Reader Operation Manual

📘 中文版 Mandarin Version: IO点纪录应用手册

1.3.1 Purpose

IOLog can record the change of input/output signal 8 second before the alarm occurs. It can be used to determine the cause of the problem.

Supported version: 10.118.44C, 10.118.46C, 10.118.48N, 10.118.52H, 10.118.56B, 10.118.57 and after.

Note: The IOLog will record data when below alarm happend.

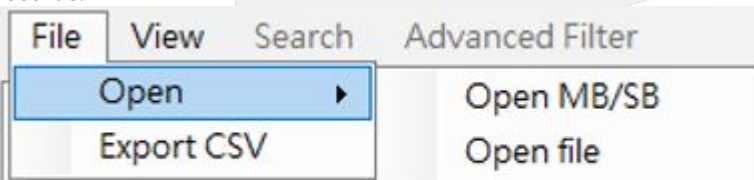
The alarm trigger recording

1. MOT-008 Loss Pulse
2. MOT-087 Inaccurate stop position. Please check if there are any mechanisms are stuck
3. MOT-019 Following error exceed
4. MOT-023 Fatal following error exceed
5. AL-120 Driver Over Current
6. AL-121 Power Module Failure
7. AL-202 Overload
8. AL-203 Over Torque 1
9. AL-521 Excessive Following Error
10. OP-005 I/O transmission error (Note)
11. SYS-041 RIO1 communication error (Note)
12. SYS-042 RIO2 communication error (Note)

Note: Supported version - 10.118.72I, 10.118.82T, 10.118.86M, 10.120.4V, 10.120.12T, 10.120.16M, 10.120.24C, 10.120.28 and after

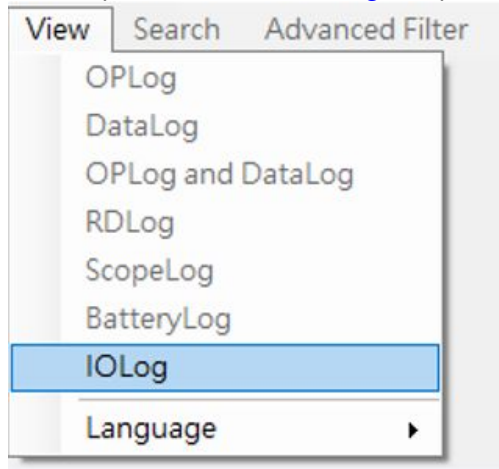
1.3.2 How to use

1. Download OKLogReader. OKLogReader supports IOLog since version 4.0.0.
2. Take out the data recorded in the CNC through MB/SB function .
3. Through "File>Open>Open file" to open an IOLog data or through "File>Open>Open MB/SB" to open total records.



Remark: If the IOLog is opened via "Open file", the IOLogForm will open directly. If you open IOLog via "Open

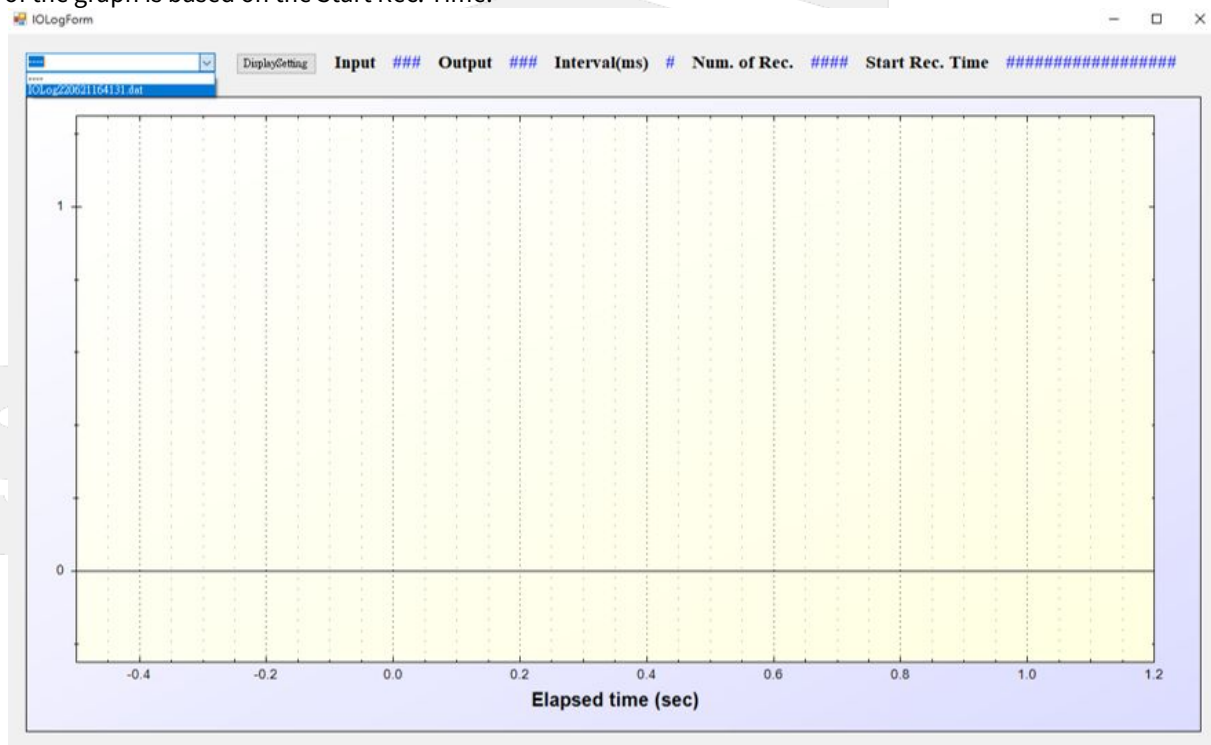
MB/SB", please click "[View>IOLog](#)" to open IOLogForm.



4. The IOLog display window is as follows, the upper left is the drop-down menu, which will display the IOLog files that can be opened. If the IOLog is opened via "Open file", only one file will appear. After selecting the IOLog file you want to open from the drop-down menu, click "[Display Settings](#)", the DisplaySettingsForm will pop up, and the basic information of selected IOLog will be shown on the upper right panel.

Among them, the [Input](#) and [Output](#) are the number of I/O points recorded in the IOLog data. This number is not always equal to the number actually used, but will be greater than or equal to the number actually used; The [Interval](#) is the scanning time of the IO point; the [Num. of Rec.](#) is the total number of data recorded at the same point;

The [Start Rec. Time](#) is the time when all data are started to be recorded, and the Elapsed time at the bottom of the graph is based on the Start Rec. Time.



5. The DisplaySettingsForm is as follows:

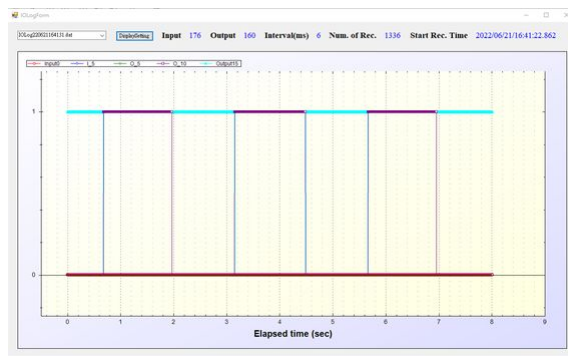
There are two display modes, Display together and Display parallel. Display together can plot up to 20 IO points at the same time and Display parallel can plot up to 5 IO points at the same time.

The setting steps are as follows:

- Choose whether to use "Display together" or "Display parallel" for presentation.
- Check the channel is going to use.
- Choose whether the signal is input or output.
- Select the signal in the drop-down menu.
- Fill in the comment. (if not filled, the signal number will be displayed, ex: O_15)
- Press "Plot" to display the result in the IOLogForm.

6. The examples displayed in IOLogForm are as follows:

Display together



Display parrallel



SYNTEC

2 Instruction of Remote Monitoring Application.

 中文版 Mandarin Version : 远端监控应用手册

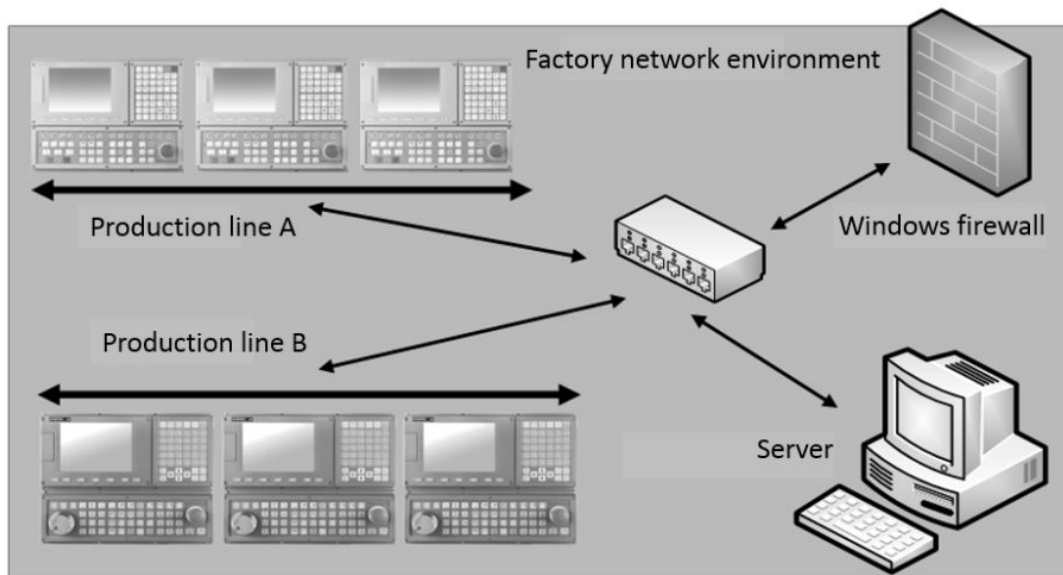
2.1 Preface

With the development of industrial evolution, cloud intelligent network, remote monitoring becomes one of the essential functions of the controller, to meet the diverse customer demand, this manual will introduce the remote monitoring applications in SYNTEC's controller and related information.

2.2 Network Architecture and Common Application

Network structure in common applications are shown as follows:

2.2.1 Network Architecture



(Fig.1)

Description

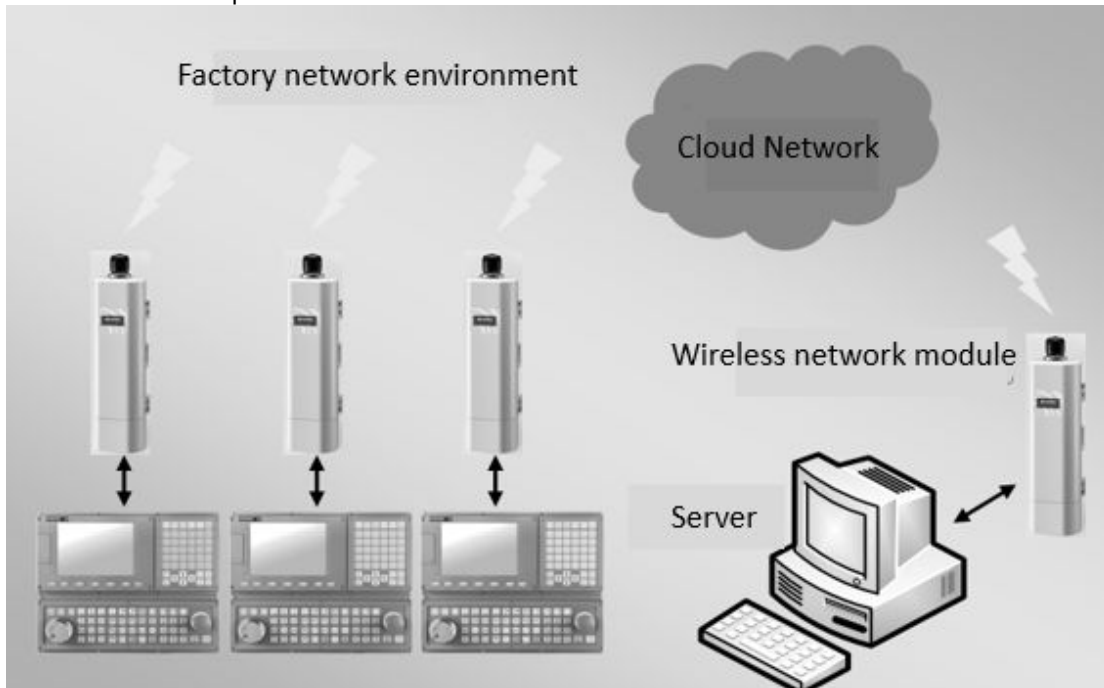
1. Each controller has individually physical IP
2. Server can connect directly to controllers via IP

2.2.2 Other common applications

Factory wireless networks applications

Due to wired network is not easy to build, most of the customers want to use wireless network module to build a more convenient network monitoring environment. To meet that demand, SYNTEC provides the wireless network module EKI-6311GN from Advantech (Option). By using this wireless network module, the network architecture can

be created. Detailed product information can be found on the Advantech website.



Cross LAN application

For currently cross network monitoring requirements, It is recommended to install remote desktop software on server as TeamViewer, UltraVNC, so that mobile devices can directly monitor the server screen through Remote Desktop Software.

2.3 Related requirements and setting

2.3.1 Specifications

1. SYNTEC controller using WinCE system
2. Software version 10.114.30 (or later)

2.3.2 Setting method

1. Setup network IP according to following path:
 - a. ARM-8 buttons type: F8 Maintain -> F2 Network setting
 - b. ARM-5 buttons type: F5 Maintain -> F2 Network setting
 - c. X86-8 buttons type: F6 Parameter -> F10 Next -> F3 Network setting
 - d. X86-5 buttons type: F10 Next -> F1 Parameter -> F10 Next -> F4 Network setting
- NOTE: Detail information about network setting, please refer to App Help with path: Mechatronic Articles -> EMC1_Installation -> EMC1_E007 Instruction of network setting
2. Setup "Kernel server" according to following path
 - a. ARM-8 buttons type: F8 Maintain -> F2 Network setting -> F5 Set Kernel Server
 - b. ARM-5 buttons type: F5 Maintain -> F2 Network setting -> F5 Set Kernel Server
 - c. X86-8 buttons type: F6 Parameter -> F10 Next -> F7 Set Kernel Server
 - d. X86-5 buttons type: F10 Next -> F1 Parameter -> F10 Next -> F7 Set Kernel Server

3. After completing setup, Kernel server screen will be enabled (fig. 3)



Fig.3: Kernel Server screen

4. Select "Open" in "start server while boot" option
5. TimeOut (millisecond): exceeds this setting time that Network does not respond, the network connection will be interrupted. Suggested setting value 300~1000
6. F3"" to save setting value after completing setup
7. Reboot controller to automatically enable Kernel server (fig.4).

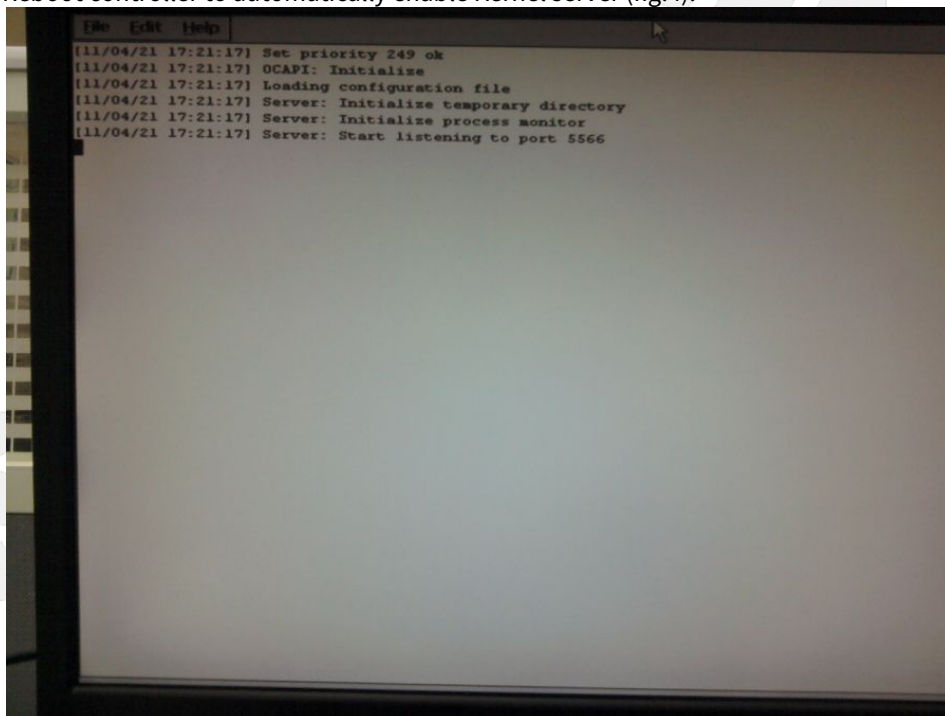


Fig.4: Enable Kernel server

2.3.3 Related signal from controller

No.	Name	Description
S098	OCAPI Server is Running	S098 is true when OCAPI Server is enabled, S098 is false when OCAPI Server is disabled.
S099	Dipole connection in use	Whether Dipole connection is used, S099 displays 1 if there is monitoring program connecting to Kernel. If not, S099 displays 0.

2.4 One-to-many remote monitoring software usage

2.4.1 Download software and set environment

Visit SYNTEC web, download related software as below

path: Download – CNC software- 04 Application Tool - RemoteAP

Downloads

【目前版本不相容 Σ7 驅動器緊急通知】

1. 控制器上之驅動器調適功能目前不適用於安川 Σ7 驅動器，若有需要者請改用安川調機軟體。
2. 軟體版本10.116.16x與安川 Σ7 驅動器不相容，若有需要者請使用10.116.10x版本。
3. ARM系列對應版本：10.116.16x(2.4.x)，10.116.10x(2.2.x)。

04 Application Tool RemoteAP

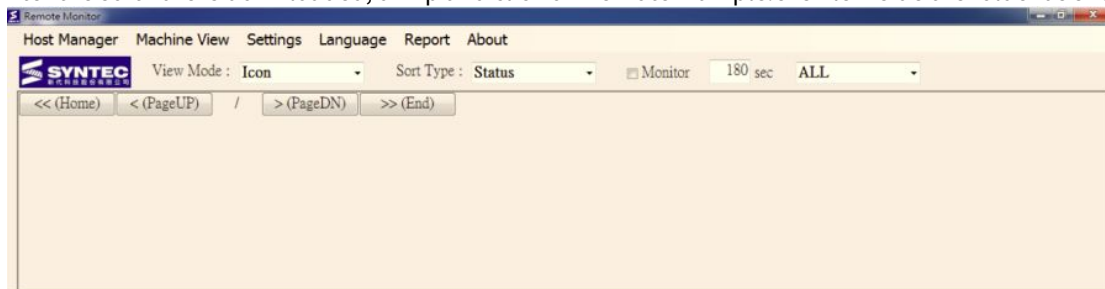
顯示最新五個版本

版本號	軟體名稱	下載	版本說明
2.0.8	SyntecRemoteAP_2.0.8.zip	新代遠端監控程式	下載 版本說明
2.0.8	SyntecRemoteAP_v1_2.0.8.zip	新代遠端監控程式(支援10.116.9以前)	下載 版本說明
2.0.7	SyntecRemoteAP_2.0.7.zip	新代遠端監控程式	下載 版本說明
2.0.7	SyntecRemoteAP_v1_2.0.7.zip	新代遠端監控程式(支援10.116.9以前)	下載 版本說明
2.0.6	SyntecRemoteAP_2.0.6.zip	新代遠端監控程式	下載 版本說明
2.0.6	SyntecRemoteAP_v1_2.0.6.zip	新代遠端監控程式(支援10.116.9以前)	下載 版本說明
2.0.5	SyntecRemoteAP_2.0.5.zip	新代遠端監控程式	下載 版本說明
2.0.3	SyntecRemoteAP_2.0.3.zip	新代遠端監控程式	下載 版本說明

Before using this software, please setup SYNTEC CNC monitor first (Ladder Editor, MarcoDev, Cncmon32, it is suggested to use version 10.114.56, 10.116.0 or later)

2.4.2 Software operation

After the software is downloaded, unzip and click on RemoteExample.exe file inside the folder as shown below.



Main Screen Description

Main screen will show all the information about the connecting machine, user can choose "Large Icons" (Fig. 5), or "list" (Fig.6)



Fig.5: large icons



Fig.6: List
Optional display contents

機型	機台	組別	狀態	需求加工件數	目前加工件數	累積加工時間	開機時間	%
TEST-10A	CYTSAI-A	1	狀態	3	0	000:01:22:13	000:16:43:48	00.00%
TEST-Super	CYTSAI-B	2	機台	0	0	000:00:00:50	000:00:31:02	

Various colors with different meanings

- 1. Green: Busy
- 2. Yellow: Feed hold
- 3. Red: Alarm
- 4. Gray: disconnected

	機型	TEST-10A
	機台	CYTSAl-A
	組別	1
	主程式	O0011
	需求加工件數	3
	目前加工件數	0
	累積加工時間	000:01:21:12
	開機時間	000:16:42:47
00.00%		

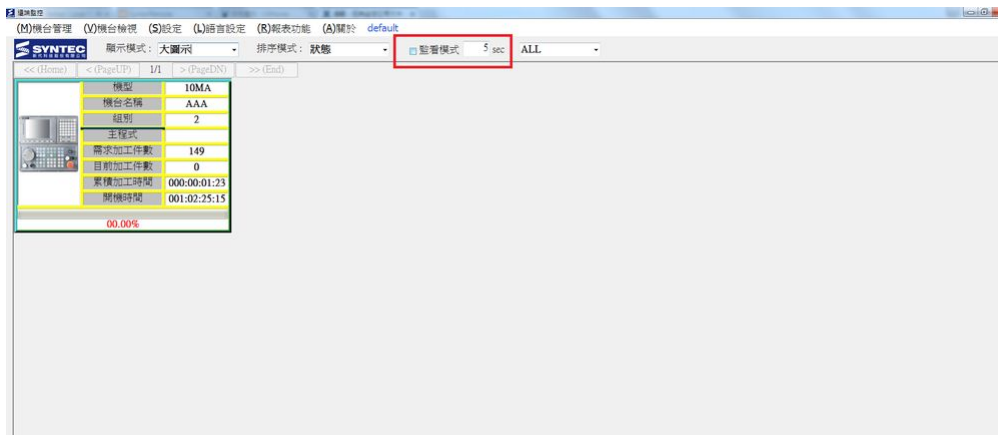
	機型	TEST-Super
	機台	CYTSAl-B
	組別	2
	主程式	1
	需求加工件數	0
	目前加工件數	0
	累積加工時間	000:00:00:50
	開機時間	000:00:30:02

	機型	TEST-10A
	機台	CYTSAl-A
	組別	1
	主程式	O0011
	需求加工件數	3
	目前加工件數	0
	累積加工時間	000:01:26:07
	開機時間	000:16:49:27
00.00%		

	機型	Connecting..
	機台	
	組別	
	主程式	
	需求加工件數	
	目前加工件數	
	累積加工時間	
	開機時間	

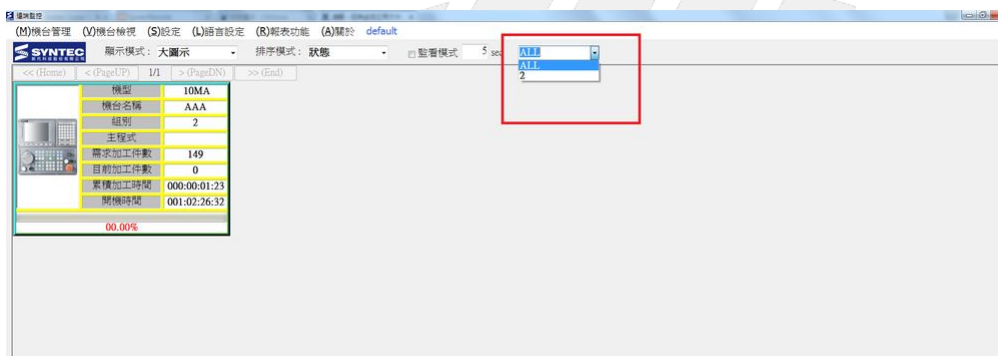
Monitor Mode

User can open monitor mode when cncView has more than two pages, it shows each page.



Group View Mode

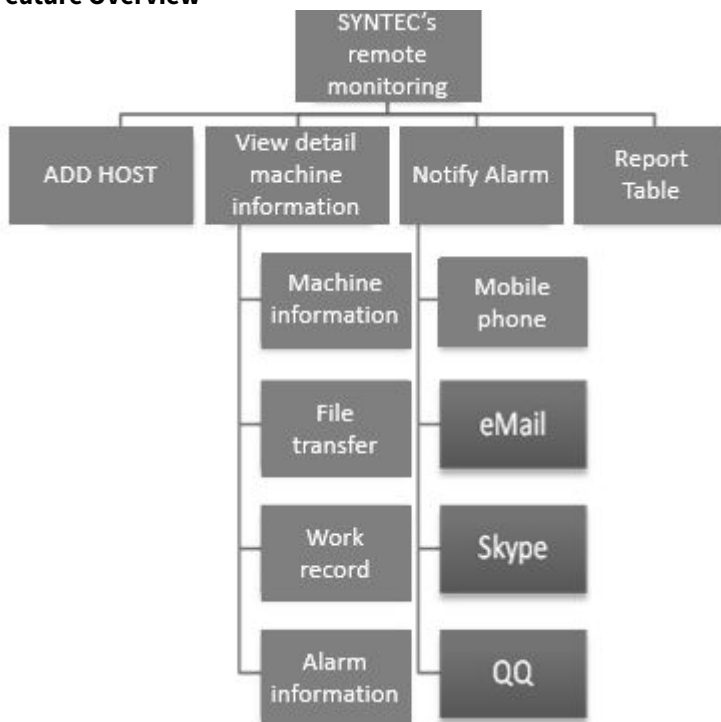
User can use this mode to only view the specific group



Notice: If remoteAP always shows "connecting..", you can close firewall or open 5568 and 5570 port in order to let PC connect to CNC

SYNTEC

Feature Overview



Host Manager-Add Host

User can set Machine Type, Machine Name, Group and Image Path (Option).

It is needed to set IP and cannot modify after setting. It must be the same with Controller's IP.

The image shows a Windows-style dialog box titled 'Hosts'. It contains five input fields: 'Machine Type', 'Machine Name', 'IP Address', 'Group', and 'Image Path'. The 'Image Path' field has a browse button (three dots) to its right. At the bottom of the dialog are two buttons: 'OK' and 'Close'.

View detail machine information

On the main screen, by double-click on the single machine, user can view more detail information of that machine as below:



Machine Infor



File transfer

CYTSAT-A(10.10.70.57)

●就緒 自動執行 已連線

機台資訊 檔案傳輸 加工記錄 警報訊息

現在加工程式: 1 已加工工件數: 3 總加工工件數: 389 開始日期時間: PM 6/6/2013 1:07

預計加工工件數: 3 單件加工時間: 00:00:00 總加工時間: 00:00:12

序號	程式名稱	開始日期	開始時間	工件數	平均加工工件數(每小時)	平均加工時間
1	1	2013-05-30	18:28:00	3	2	00:27:32
2	1	2013-05-23	22:41:00	100	245	00:00:14
3	1	2013-05-23	21:01:00	100	346	00:00:10
4	1	2013-05-23	20:54:00	100	589	00:00:06
5	1	2013-05-23	20:52:00	16	311	00:00:11
6	1	2013-05-23	20:47:00	3	95	00:00:37
7	1	2013-05-23	20:47:00	3	106	00:00:33
8	1	2013-05-23	20:47:00	15	606	00:00:05

Work record

CYTSAT-B(10.10.70.57)

●就緒 自動執行 已連線

機台資訊 檔案傳輸 加工記錄 警報訊息

現存警報 歷來警報

序號	發生時間	類別-編號	警報內容
0	2012/11/05 16:25:30	Operation-22	加工資料檔重建,加工前請重校加工資料
1	2012/11/08 09:37:42	MLC-1	X軸超過正向硬體行程極限
2	2012/11/08 09:37:53	MLC-1	X軸超過正向硬體行程極限
3	2012/11/08 09:38:14	MLC-1	X軸超過正向硬體行程極限

Alarm Infor

Notify Alarm

Can send Prompts/Alarm to manager when alarm appears via Pipeline notification set on the alarm setting screen.

Alarm Setting

R 4000 = 1 SendMSG: ERR: R4000=1 ALARM e-mail SMS Skype

2 ERR: R4000=2 ALARM ☐ ☒ ☐

3 ERR: R4000=3 ALARM ☒ ☒ ☒

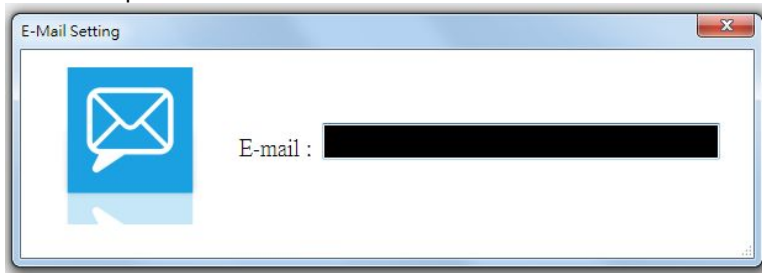
Editing screen of prompts/alarm



SMS Setting

Mobile Phone :

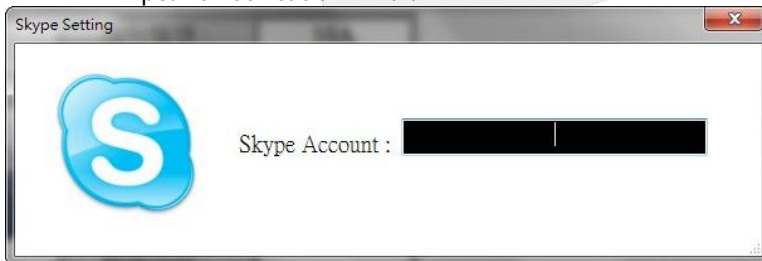
Pipeline notification-Mobile



E-Mail Setting

E-mail :

Pipeline notification-Email



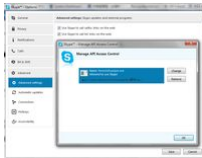
Skype Setting

Skype Account :

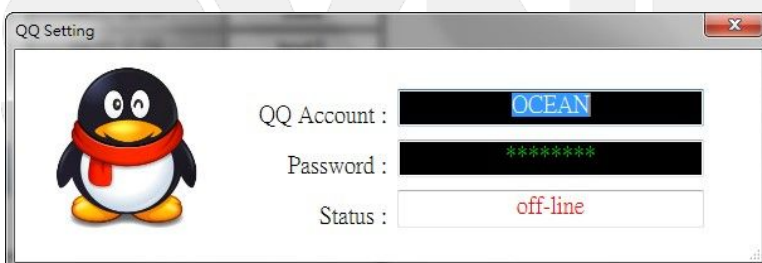
Pipeline notification-Skype

Method:

1. Install SKYPE in the PC Remote Monitoring Application installed, and login account A
2. Allow account A enable other process access in SKYPE advanced setting



3. Set another account B for Remote Monitoring Application alarm notification
4. Follow 3 steps above, account B will receive SKYPE message while alarm



QQ Setting

QQ Account :

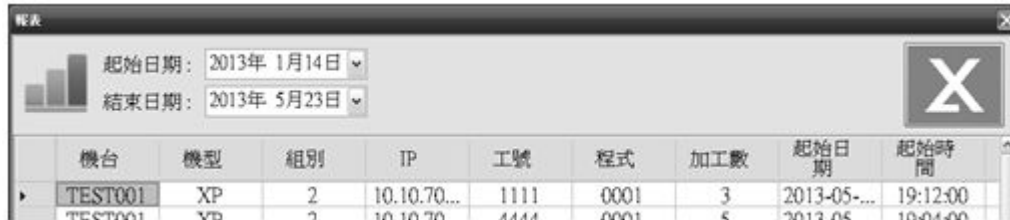
Password :

Status :

Pipeline notification-QQ

Report table

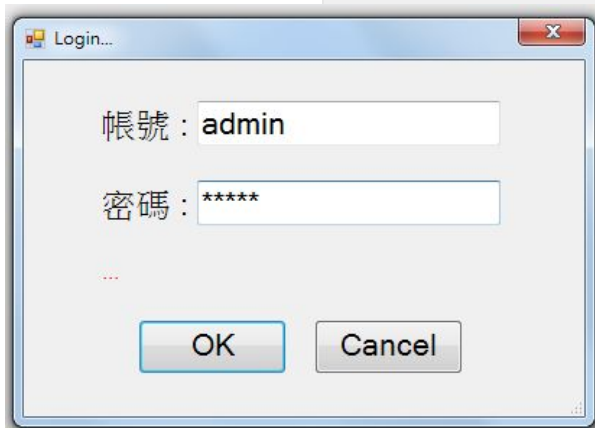
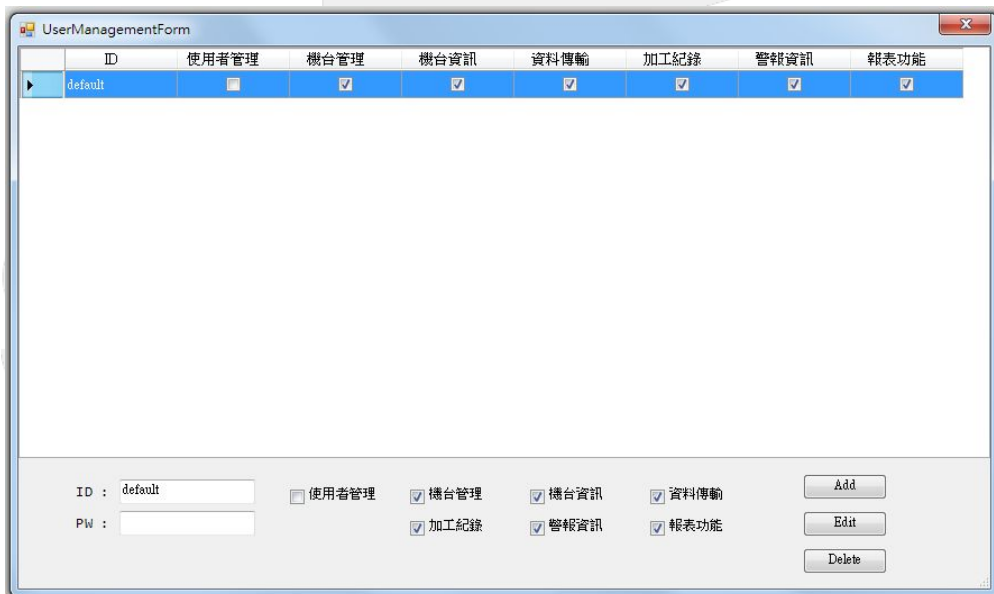
Report table will synchronously display all machining information of each controller. Display information can be defined by user (refer to "display content of report table"),



機台	機型	組別	IP	工號	程式	加工數	起始日期	起始時間
TEST001	XP	2	10.10.70...	1111	0001	3	2013-05-...	19:12:00
TEST001	XP	2	10.10.70...	1111	0001	3	2013-05-...	19:12:00

Authority Management

Admin can manage all of users' right of view page

ID	使用者管理	機台管理	機台資訊	資料傳輸	加工紀錄	警報資訊	報表功能
default	☐	☒	☒	☒	☒	☒	☒

ID : default ☐ 使用者管理 ☒ 機台管理 ☒ 機台資訊 ☒ 資料傳輸 Add

PW : ☒ 加工紀錄 ☒ 警報資訊 ☒ 報表功能 Edit

Delete

2.5 Customized development

2.5.1 Standard customized method

Currently the content of remote monitoring is variety. To meet user demand, SYNTEC provides user with standard customization including controller and remote monitoring software.

Standard customization of controller

2.5.2 Customization of work record table

Comparison of old and new specifications for work records

The work record sheet is separated by 10.118.29z, the old version is maintained by the human-machine group and the new version is maintained by 產一.

- This chapter will introduce the customization method of the old version.
- For the new version of the customization, we do not provide external custom SOP manuals at this time, please contact the SYNTEC product department for discussion if needed.

Old specifications:

- User records are not supported (custom work numbers required)
- Record generation time point
There are unrecorded cumulative workpieces that satisfy the following conditions
 - a. Profile change
 - b. The number of required workpieces reaches

CNC Monitor v10.116.54Z						
G54	TEST2 N0 L1		加工監控	2019/1/31	09:45:37	
現在加工程式	TEST2		加工程式註解	G01 X20. ;		
預計加工件數	0		開始日期時間	1/31/2019 9:45 AM		
已加工件數	2		總加工件數	18		
單件加工時間	0:00:01		總加工時間	0:00:04		
序號	程式名稱	開始日期時間	總時間	工件數	程式註解	
1	TEST1	1/31/2019	9:44 AM	0:00:16	9	G01 X20. ;
2	-檢尾-					

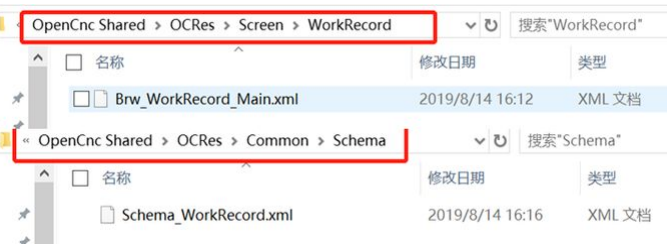
New specifications:

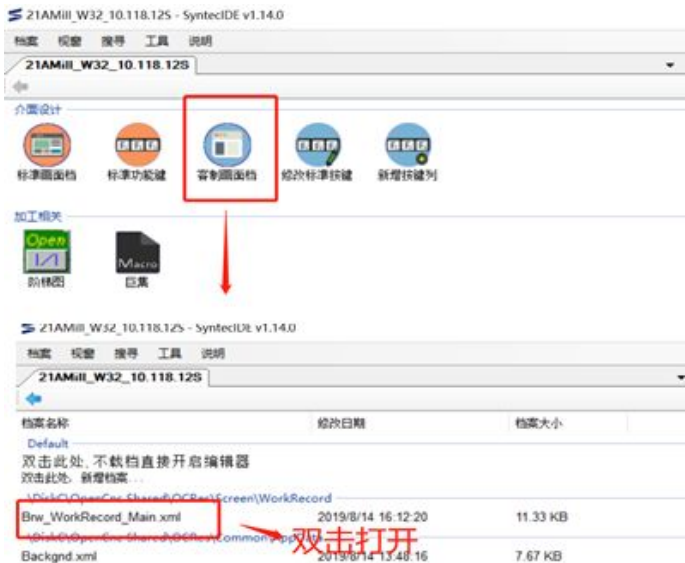
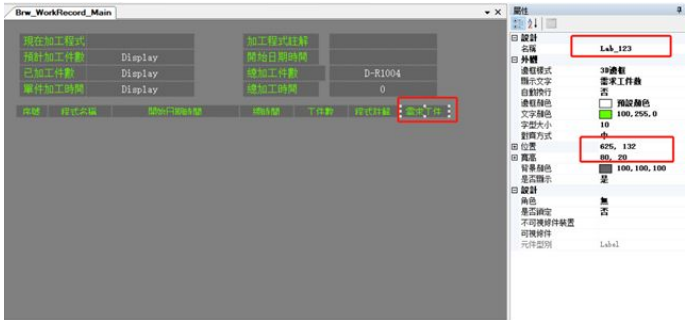
- Support for user records(permission management, version 10.118.12G and later)
- Record generation time point
There are unrecorded cumulative workpieces that satisfy the following conditions
 - a. Profile change
 - b. The number of required workpieces reaches
 - c. Operator change

現在加工程式	123	加工程式註解	G01 X100. F10000
預計加工件數	10	開始日期時間	11/20/2018 7:40 PM
已加工件數	10	總加工件數	59
單件加工時間	0:00:01	總加工時間	0:00:09

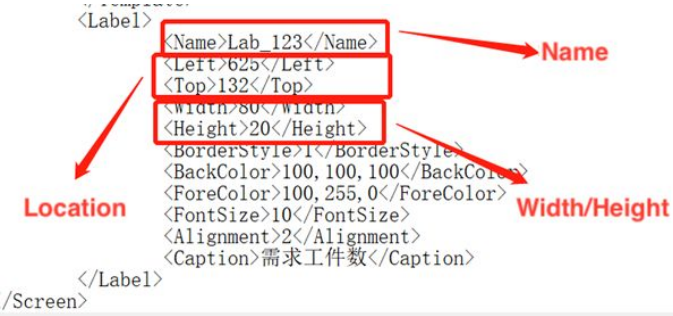
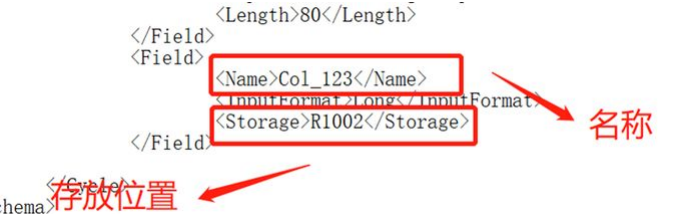
序號	使用者	程式名稱	開始日期時間	總時間	工件數	程式註解
1	Worker2	123	11/20/2018 7:40 PM	0:00:09	10	G01 X100. F10000
2	Worker1	123	11/20/2018 7:40 PM	0:00:04	4	G01 X100. F10000
3	M	123	11/20/2018 7:37 PM	0:00:06	6	G01 X100. F10000
4	DEFAULT	123	11/20/2018 7:37 PM	0:00:06	6	G01 X100. F10000
5	-檔尾-					

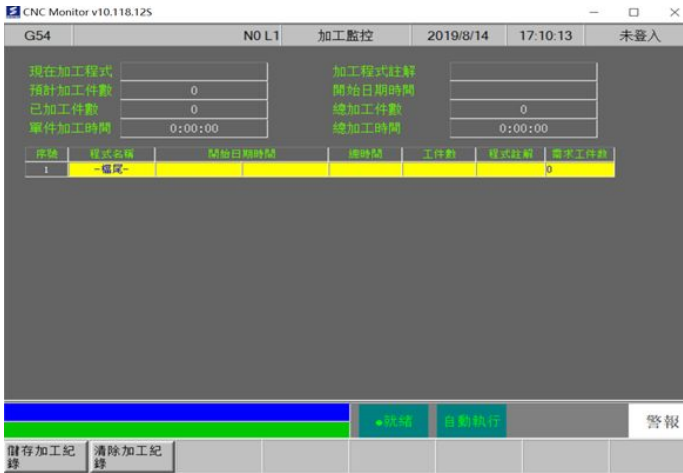
Customized work records

No	Steps specifications	Schematic diagram
1	First prepare the following two XML files (copied from the standard path) Standard path: File 1: DiskC\OpenCnc Shared\StdMMIRes\Screen\WorkRecord File 2: DiskC\OpenCnc Shared\StdMMIRes\Common\Schema	
2	Put both XML files in the specified folder. Note: The path must be consistent with the diagram.	

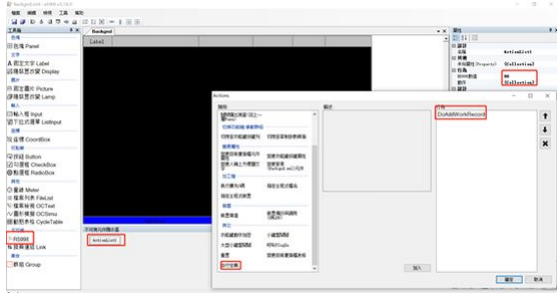
No	Steps specifications	Schematic diagram
3	Open SyntecIDE or EHMI software and enter the standard work record page, as shown in Figure 2. On this page, the operations such as adding, modifying, resizing, positioning, etc. can be performed; for example, creating a number of demanded workpieces. Note: Please be aware of the location, width, height, and name when customizing.	 Figure 1 SyntecIDE Page  Figure 2 Standard work record page



No	Steps specifications	Schematic diagram
4	After the demanded workpiece is created on the work record page, a new column Label will be automatically added in Brw_WorkRecord_Main.xml to display the relevant information as shown in Figure 3. Then a Template file needs to be created inside that XML file (which can be copied and pasted) as in Figure 4, and modified for name, width, and height. Template is where the controller generated processing record data is displayed, and if it is not created, the content will not be displayed.	 Figure 3 Label  Figure 4 Template
5	Then create a <Field> document in OCRes\Common\Schema\Schema_Work Record.xml (which can be copied and pasted) as shown in Figure 5, and modify the name and R-value. Note: <Storage>R1002 represents the value of the number of demand workpieces to be stored on the R1002 register.	 Figure 5 Field

No	Steps specifications	Schematic diagram
6	Finally, turn on the controller and the required number of workpieces for the customization will appear, as shown in Figure 6. Note: (1) The name must be the same throughout the customization process. (2) The XML file modification and work record page cannot be operated at the same time. (3) Do not remove the "start date and time" field in the customization process, otherwise, the data will not be able to be captured by Cloud.	 Figure 6 Customized page

Auto-generation of work records

No	Steps specifications	Schematic diagram
1	The action that triggers the work record generation: DoAddWorkRecord Note: (1) This action can be customized. (2) It is recommended to use controller version 10.118.120 and later, the start time/total time after customization of the lower version will be abnormal.	
2	Automatic work record generation method. (For reference only) Use Backgnd.xml component and assign R5998 to trigger the action. As shown in the figure.	

No	Steps specifications	Schematic diagram																																																			
3	Place the set Backgnd.xml component in the specified location. DiskC\OpenCnc Shared\OCRes\Common\AppData																																																				
4	Compile MACRO, such as using G0800 to conduct the value of R5998, where G10 is used. As shown in the figure.	 <pre> *G0800 - 记事本 文件(E) 编辑(E) 格式(O) 查看(V) 帮助(H) %@ MACRO G10L1000 P5998 R98; G04 X4.; G10L1000 P5998 R0; G04 X3.; M99; </pre>																																																			
5	Place G0800 inside the NC file or other locations, and it will trigger the action of generating work records when G0800 is executed.																																																				
6	Set the controller M code work count, the parameter is Pr3804. Note: The value of Pr3804 should be consistent with the NC program M code, for example, if Pr3804=123, then there should be M123 in the NC program before it carries on counting.	 CNC Monitor v10.118.14H <table border="1"> <thead> <tr> <th>编号</th> <th>说明</th> <th>数值</th> </tr> </thead> <tbody> <tr><td>3734</td><td>*第三组轴交换第二轴偏移量</td><td>0</td></tr> <tr><td>3735</td><td>*第三组轴交换反向</td><td>0</td></tr> <tr><td>3736</td><td>*第四组轴交换轴号第一轴</td><td>0</td></tr> <tr><td>3737</td><td>*第四组轴交换轴号第二轴</td><td>0</td></tr> <tr><td>3738</td><td>*第四组轴交换第一轴偏移量</td><td>0</td></tr> <tr><td>3739</td><td>*第四组轴交换第二轴偏移量</td><td>0</td></tr> <tr><td>3740</td><td>*第四组轴交换反向</td><td>0</td></tr> <tr><td>3801</td><td>G95时进给量与主轴位置紧密配合</td><td>0</td></tr> <tr><td>3802</td><td>内定高精度模式(0:G04, T.G02, Z.HRC)</td><td>0</td></tr> <tr><td>3804</td><td>工件计数M码编号</td><td>123</td></tr> <tr><td>3805</td><td>静态吸屑器检测灵敏度(ms)</td><td>1000</td></tr> <tr><td>3806</td><td>第二轴轴B轴(0:不启动, 1:启动)</td><td>0</td></tr> <tr><td>3807</td><td>圆弧终点不在圆弧上检查窗口(BLU)</td><td>5</td></tr> <tr><td>3808</td><td>高精度平滑性(0:关闭, 1:平滑性最高, 9:精度最高)</td><td>0</td></tr> <tr><td>3809</td><td>*是否UVW为XYZ轴增量命令(0:否, 1:是)</td><td>0</td></tr> <tr><td>3810</td><td>*启动同一单节M code同时执行功能(0:否, 1:是)</td><td>0</td></tr> </tbody> </table> *001_18_01_01.nc - 记事本 <pre> 文件(E) 编辑(E) 格式(O) 查看(V) 帮助(H) G0 X732.500 Y2402.500 Z38.000 Z30.0 M123 G800 M99 </pre>	编号	说明	数值	3734	*第三组轴交换第二轴偏移量	0	3735	*第三组轴交换反向	0	3736	*第四组轴交换轴号第一轴	0	3737	*第四组轴交换轴号第二轴	0	3738	*第四组轴交换第一轴偏移量	0	3739	*第四组轴交换第二轴偏移量	0	3740	*第四组轴交换反向	0	3801	G95时进给量与主轴位置紧密配合	0	3802	内定高精度模式(0:G04, T.G02, Z.HRC)	0	3804	工件计数M码编号	123	3805	静态吸屑器检测灵敏度(ms)	1000	3806	第二轴轴B轴(0:不启动, 1:启动)	0	3807	圆弧终点不在圆弧上检查窗口(BLU)	5	3808	高精度平滑性(0:关闭, 1:平滑性最高, 9:精度最高)	0	3809	*是否UVW为XYZ轴增量命令(0:否, 1:是)	0	3810	*启动同一单节M code同时执行功能(0:否, 1:是)	0
编号	说明	数值																																																			
3734	*第三组轴交换第二轴偏移量	0																																																			
3735	*第三组轴交换反向	0																																																			
3736	*第四组轴交换轴号第一轴	0																																																			
3737	*第四组轴交换轴号第二轴	0																																																			
3738	*第四组轴交换第一轴偏移量	0																																																			
3739	*第四组轴交换第二轴偏移量	0																																																			
3740	*第四组轴交换反向	0																																																			
3801	G95时进给量与主轴位置紧密配合	0																																																			
3802	内定高精度模式(0:G04, T.G02, Z.HRC)	0																																																			
3804	工件计数M码编号	123																																																			
3805	静态吸屑器检测灵敏度(ms)	1000																																																			
3806	第二轴轴B轴(0:不启动, 1:启动)	0																																																			
3807	圆弧终点不在圆弧上检查窗口(BLU)	5																																																			
3808	高精度平滑性(0:关闭, 1:平滑性最高, 9:精度最高)	0																																																			
3809	*是否UVW为XYZ轴增量命令(0:否, 1:是)	0																																																			
3810	*启动同一单节M code同时执行功能(0:否, 1:是)	0																																																			

No	Steps specifications	Schematic diagram
7	When M123 (work count) and G800 (generating work record) are placed in the NC program of the profile, then when this program is executed, a machining record will be generated. As shown in the figure.	

Contents of the old documents

Word record table can be customized by XML

Available version: 10.116.3, 10.116.0D, 10.114.56C

Display content of work record table

Work record table is saved by using Cycle Editor, so it is needed to define other Schema. The standard definition path: StdMMIRes\Common\Schema\Schema_WorkRecord.xml. User can copy that file to OCRES according path (OCRes\Common\Schema\ Schema_WorkRecord.xml) for customization purpose.

To meet user demand, the Field in Schema is added <Storage> information that can defined register R as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<Schema>
  <Cycle name="CycleEdit">
    <Field>
      <Name>Col_User</Name>
      <InputFormat>String</InputFormat>
      <Length>20</Length>
      <Storage>R4010</Storage>
    </Field>
  </Cycle>
</Schema>
```

Once above example is executed, it will automatically write R4010 value in work record table.

Work record table page

Work record table page is defined in "StdMMIRes\Common\AppData\XML_WorkRecord.xml", user can copy this file to OCRes (OCRes\Common\AppData) to customize.

Condition to update work record table

User can set conditions to do ACTION for updating work record table, in which ACTION is "DoAddWorkRecord".

P.S. when part count is 0, this action is invalid.

Standard customization of remote monitoring software

Add group fields

Because group fields recorded is in remote monitoring software, so it is standard feature. When adding or modifying machine information, it can fill in group.

Display customized information

Except picture and percentage are not customized, other remaining information can be defined according to user demand.

Definition file

- **File name:** SETTING.INI (if not, please add by yourself)
- **Path:** the same with remote monitoring soft
- **Defined method:** refer to the following fig.

```
[MachineMonitor]
STD_MACHINE_TYPE_MONITOR=機型
STD_MACHINE_NAME_MONITOR=機台
STD_MACHINE_GROUP_MONITOR=組別
R4010,STR=工號
R13=模式
STD_WORK_PROGRAM_NAME=主程式
STD_WORK_REQUIRE_PART_COUNT=需求加工件數
STD_WORK_PART_COUNT=目前加工件數
STD_WORK_ACC_TIME=累積加工時間
STD_WORK_POWER_ON_TIME=開機時間
```



機型	10A
機台	TEST003
組別	1
工號	1100
模式	2
主程式	O0001
需求加工件數	200
目前加工件數	200
累積加工時間	000:00:12:05
開機時間	000:01:26:32



100.00%

- **Identification Title:** Beginning is identified according to [MachineMonitor]
 - **Source:** shown as left hand side
 - **Standard content:** Beginning with STD, currently default content as bellow

Display content	Corresponding resources
Machine type	STD_MACHINE_TYPE_MONITOR
Machine name	STD_MACHINE_NAME_MONITOR
Group	STD_MACHINE_GROUP_MONITOR
Program name	STD_WORK_PROGRAM_NAME
Work require part count	STD_WORK_REQUIRE_PART_COUNT
Work part count	STD_WORK_PART_COUNT

Work acc time	STD_WORK_ACC_TIME
Time of power on	STD_WORK_POWER_ON_TIME

- **Customized content: Beginning with R** (if value R is a string format, it is required to add ", STR", otherwise it will be considered a digital display.).
- **String display on remote monitoring software:** shown as right hand side (not support multi language)

P.S. The display order on remote monitoring soft is according to the order of SETTING.INI.

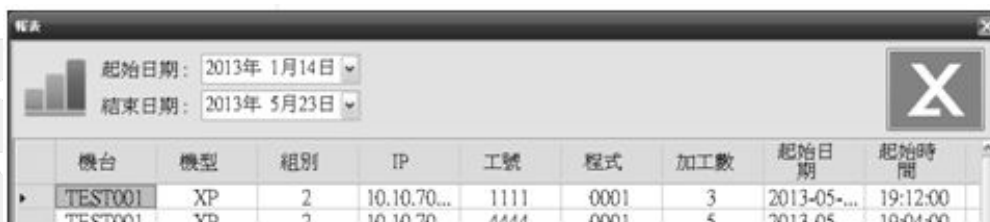
Display content of report table

It needs to comply with work record table of controller. If no information is on controller, a blank is displayed. Each field can be defined by user.

Definition file

- **File name:** SETTING.INI (if not, please add by yourself)
- **Path:** the same with remote monitoring soft
- **Defined method:** refer to the following fig.

```
[WorkRecord]
STD_MACHINE_NAME_FIELD=機台
STD_MACHINE_TYPE_FIELD=機型
STD_MACHINE_GROUP_FIELD=組別
STD_MACHINE_IP_FIELD=IP
Col_User=工號
Col_ProgName=程式
Col_PartCount=加工數
Col_StartDate=起始日期
Col_StartTime=起始時間
Col_TotalTime=總時間
```



機台	機型	組別	IP	工號	程式	加工數	起始日期	起始時間
TEST001	XP	2	10.10.70...	1111	0001	3	2013-05-...	19:12:00

- **Identification Title:** Beginning is identified according to [MachineMonitor]
 - **Source:** shown as left hand side
 - **Standard content:** Beginning with STD, currently default content as bellows

Display content	Corresponding resources
-----------------	-------------------------

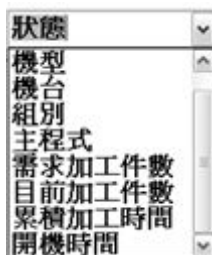
Machine type	STD_MACHINE_TYPE_MONITOR
Machine name	STD_MACHINE_NAME_MONITOR
Group	STD_MACHINE_GROUP_MONITOR
IP	STD_MACHINE_IP_FIELD

- **Work record table** (Schema) **content:** According to content Field Name of "Schema_WorkRecord.xml" on controller.
- **String display on remote monitoring software:** shown as right hand side (not support multi language)

P.S. The display order on remote monitoring soft is according to the order of SETTING.INI.

Machine sorting function

All customized information in "Display Information customization features" can be sorted, refer to the figure below.



Export function of report table

Add the function of exporting CSV file. After exporting report table, user can use worksheets software (ex. Excel, SpreadSheets, ... etc.) to do sort or pivot table...

Standard customization example

User demand

In production line, employee must log in ID number to operate machine. Once satisfying one of condition below, the employee's production will be updated on record table:

- Condition 1: Total required part is completed (system updates automatically)
- Condition 2: Part count is unequal to zero and change machining program (system updates automatically)
- Condition 1: employee works off and log out (need customization)

Customized method

1. Do a corresponding input field R3510 (Format: string)

G54	1 NO L1	機台設定	2013/5/23	23:09:45
-----	---------	------	-----------	----------

輸入工號

1010

●就緒
自動執行
警報

2. Do one function key (OK). Once function key is activated, the value of R3510 will be filled into R4010(self-defined action "CUSTOMDEVSTR")。

G54	1 NO L1	機台設定	2013/5/23	23:09:28
-----	---------	------	-----------	----------

工號

1010

工單

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警報

3. Fill the value of R4010 into work record of employee. Copy the Schema file(StdMMIRes\Common\Schema\Schema_WorkRecord.xml) to the OCRES path (OCRes\Common\Schema) to customize. Add the below content:

```
<Field>
  <Name>Col_User</Name>
  <InputFormat>String</InputFormat>
  <Length>20</Length>
  <Storage>R4010</Storage>
</Field>
```

4. Do one function key (LOG OUT). Once activated can do following action

- action "DoAddWorkRecord",
- Clear R4010.

G54 1 NO.1 執行加工 2013/5/23 23:10:03

加工記錄表單

現在加工程式	1	加工程式註解	G01 X0. Y0.
預計加工件數	100	開始日期時間	5/23/2013 10:41 PM
已加工件數	100	總加工件數	242
單件加工時間	0:00:00	總加工時間	0:17:18

序號	工單	工號	程式名稱	開始日期時間	總時間	工件數	程式註解
1		1010	1	5/23/2013 9:01 PM	0:17:18	100	G01 X0. Y0.
2		1010	1	5/23/2013 8:54 PM	0:10:11	100	G01 X0. Y0.
3		1000	1	5/23/2013 8:52 PM	0:03:05	16	G01 X0. Y0.
4		1000	1	5/23/2013 8:47 PM	0:01:53	3	G01 X0. Y0.
5		1000	1	5/23/2013 8:47 PM	0:01:41	3	G01 X0. Y0.
6			1	5/23/2013 8:47 PM	0:01:29	15	G01 X0. Y0.
7			1	5/23/2013 8:42 PM	0:01:29	15	G01 X0. Y0.
8			1	5/23/2013 8:40 PM	0:00:42	5	G01 X0. Y0.
9			1	5/23/2013 8:15 PM	0:00:21	5	G01 X0. Y0.
10			-檔尾-				

X -15.000 Y 0.000 Z -15.000

Y 0.000 Z 0.000

●就緒 自動執行 警報

Above function can be used to do the log out key that can write current part count into the work record table (including employee ID).

However, there are two cases have not yet considered.

1. Syntec's controller will automatically update the work record table when one of below condition is satisfied:
 - Condition 1: Total required part is completed (system updates automatically)
 - Condition 2: Part count is unequal to zero and change machining program (system updates automatically)

It is needed to avoid system update automatically and rewrite problem when employee selects logout button

2. Previous employee forgets to log out, so when the next one logs in, it can update the work record table.

According to 2 above case, it is needed to use prediction as below (in this case, using PLC with HMI button and R5998)

HMI		HIM	
PLC			
R3800 = 1(Log in)	R6800 = 0(Required part is not reached)	R5998	Corresponding action of R5998
R3800 = 2(Log out)	R6800 = 1(required part is reached)		
	refer to note 1"Require Part Count Reached"		

1	0	1	1. DoAddWorkRecord 2. Set R5998= 0 3. Set Part count 0
1	1	3	1. Set R5998=0 2. Set Part count 0
2	0	2	1. DoAddWorkRecord 2. Set R5998= 0 3. Set Part count 0 4. Set R4010= 0
2	1	4	1. Set R5998= 0 2. Set Part count 0 3. Set R4010= 0

PLC and HMI condition

Note 1:

N0.	Name	Description
S034	Require Part Count Reached	When required part is reached, this S FLAG is ON. Once Cycle Start or Reset, this FLOG is OFF

2.5.3 API customized method

To meet the demand of remote monitoring application from customer, SYNTEC provides open library, development files and examples. User can visit SYNTEC website to download related data.

SYNTEC

Path: DOWNLOADS -> CNC Software -> Open CNC Tools -> SYNTEC Remote CNC monitor.

HOME	PRODUCTS	JOBS	DOWNLOADS	VIDEO	INTERNAL NETWORK	CONTACT
------	----------	------	-----------	-------	------------------	---------

▸ New CNC Software
 ▸ Application Note Database
 ▸ SYNTEC Technical Notification
 ▸ SYNTEC Staff Zone
 ▸ Other Tools

Downloads

【目前版本不相容 Σ7 驅動器緊急通知】

1. 控制器上之驅動器調適功能目前不適用於安川 Σ7 驅動器。若有需要者請改用安川調機軟體。
2. 軟體版本10.116.16x與安川 Σ7 驅動器不相容,若有需要者請使用10.116.10x版本。
3. ARM系列對應版本: 10.116.16x(2.4.x), 10.116.10x(2.2.x)。

04.Application Tool ▾ Syntec RemoteCNC API ▾
 顯示最新五個版本 ▾

版本號: 1.0.8			
SyntecRemoteAPI_1.0.8.zip	新代遠端監控函式庫	下載	版本說明
SyntecRemoteAPI_v1_1.0.8.zip	新代遠端監控函式庫(支援 10.116.9以前)	下載	版本說明

版本號: 1.0.7			
SyntecRemoteAPI_1.0.7.zip	新代遠端監控函式庫	下載	版本說明
SyntecRemoteAPI_v1_1.0.7.zip	新代遠端監控函式庫(支援 10.116.9以前)	下載	版本說明

版本號: 1.0.6			
SyntecRemoteAPI_1.0.6.zip	新代遠端監控函式庫	下載	版本說明

版本號: 1.0.5			
SyntecRemoteAPI_1.0.5.zip	新代遠端監控函式庫	下載	版本說明

版本號: 1.0.4			
SyntecRemoteAPI_1.0.4.zip	新代遠端監控函式庫	下載	版本說明

2.6 Customization of work record table

2.6.1 Customization of work record table

Comparison of old and new specifications for work records

The work record sheet is separated by 10.118.29z, the old version is maintained by the human-machine group and the new version is maintained by 產一.

- This chapter will introduce the customization method of the old version.
- For the new version of the customization, we do not provide external custom SOP manuals at this time, please contact the SYNTEC product department for discussion if needed.

Old specifications:

- User records are not supported (custom work numbers required)
- Record generation time point
 - There are unrecorded cumulative workpieces that satisfy the following conditions
 - a. Profile change
 - b. The number of required workpieces reaches

G54		TEST2 N0 L1		加工監控	2019/1/31	09:45:37
現在加工程式	TEST2		加工程式註解	G01 X20. ;		
預計加工件數	0		開始日期時間	1/31/2019 9:45 AM		
已加工件數	2		總加工件數	18		
單件加工時間	0:00:01		總加工時間	0:00:04		
序號	程式名稱	開始日期時間	總時間	工件數	程式註解	
1	TEST1	1/31/2019	9:44 AM	0:00:16	9	G01 X20. ;
2	-檔尾-					

New specifications:

- Support for user records(permission management, version 10.118.12G and later)
- Record generation time point
 - There are unrecorded cumulative workpieces that satisfy the following conditions
 - a. Profile change
 - b. The number of required workpieces reaches
 - c. Operator change

現在加工程式	123	加工程式註解	G01 X100. F10000
預計加工件數	10	開始日期時間	11/20/2018 7:40 PM
已加工件數	10	總加工件數	59
單件加工時間	0:00:01	總加工時間	0:00:09

序號	使用者	程式名稱	開始日期時間		總時間	工件數	程式註解
1	Worker2	123	11/20/2018	7:40 PM	0:00:09	10	G01 X100. F10000
2	Worker1	123	11/20/2018	7:40 PM	0:00:04	4	G01 X100. F10000
3	M	123	11/20/2018	7:37 PM	0:00:06	6	G01 X100. F10000
4	DEFAULT	123	11/20/2018	7:37 PM	0:00:06	6	G01 X100. F10000
5	-檔尾-						

Customized work records

No	Steps specifications	Schematic diagram
1	First prepare the following two XML files (copied from the standard path) Standard path: File 1: DiskC\OpenCnc Shared\StdMMIRes\Screen\WorkRecord File 2: DiskC\OpenCnc Shared\StdMMIRes\Common\Schema	 Brw_WorkRecord_Main.xml  Schema_WorkRecord.xml

No	Steps specifications	Schematic diagram
2	Put both XML files in the specified folder. Note: The path must be consistent with the diagram.	
3	Open SyntecIDE or EHMI software and enter the standard work record page, as shown in Figure 2. On this page, the operations such as adding, modifying, resizing, positioning, etc. can be performed; for example, creating a number of demanded workpieces. Note: Please be aware of the location, width, height, and name when customizing.	

Figure 1 SyntecIDE Page

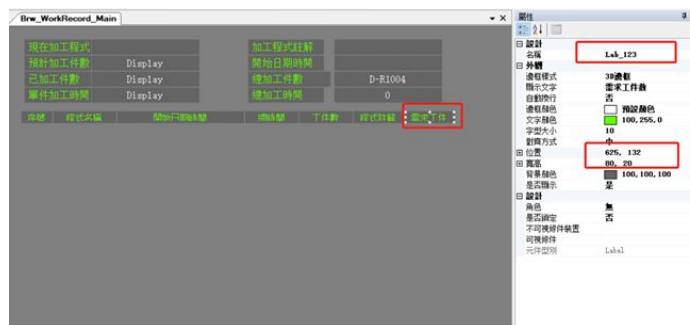
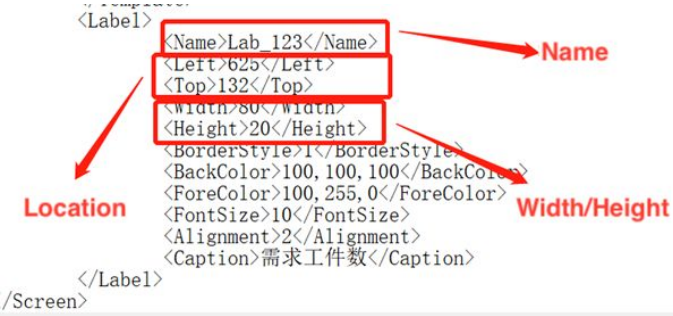
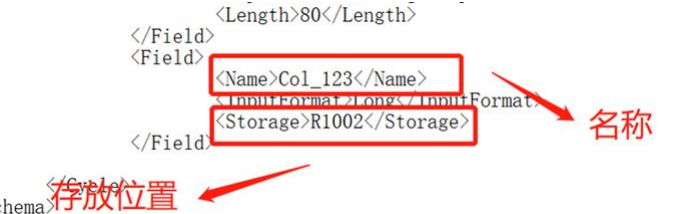
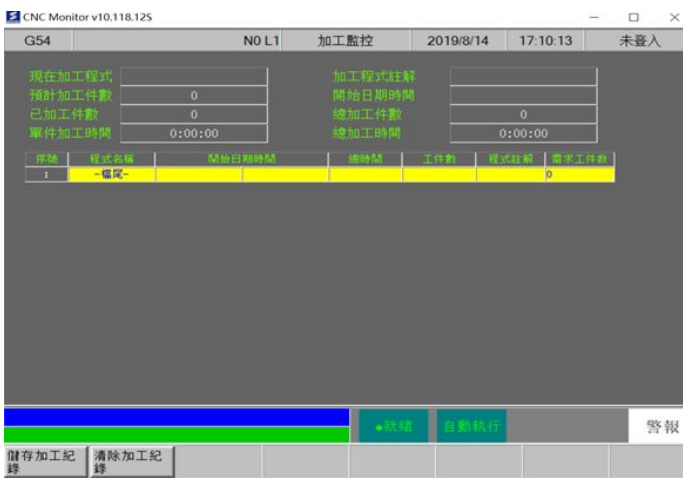
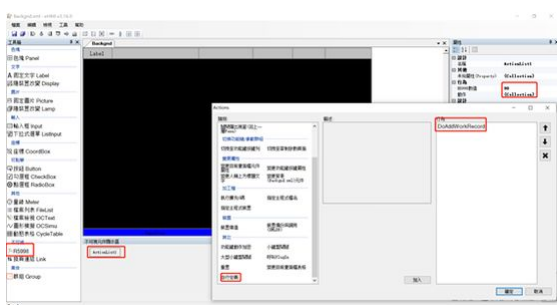


Figure 2 Standard work record page

No	Steps specifications	Schematic diagram
4	After the demanded workpiece is created on the work record page, a new column Label will be automatically added in Brw_WorkRecord_Main.xml to display the relevant information as shown in Figure 3. Then a Template file needs to be created inside that XML file (which can be copied and pasted) as in Figure 4, and modified for name, width, and height. Template is where the controller generated processing record data is displayed, and if it is not created, the content will not be displayed.	 Figure 3 Label  Figure 4 Template
5	Then create a <Field> document in OCRes\Common\Schema\Schema_Work Record.xml (which can be copied and pasted) as shown in Figure 5, and modify the name and R-value. Note: <Storage>R1002 represents the value of the number of demand workpieces to be stored on the R1002 register.	 Figure 5 Field

No	Steps specifications	Schematic diagram
6	Finally, turn on the controller and the required number of workpieces for the customization will appear, as shown in Figure 6. Note: (1) The name must be the same throughout the customization process. (2) The XML file modification and work record page cannot be operated at the same time. (3) Do not remove the "start date and time" field in the customization process, otherwise, the data will not be able to be captured by Cloud.	 Figure 6 Customized page

Auto-generation of work records

No	Steps specifications	Schematic diagram
1	The action that triggers the work record generation: DoAddWorkRecord Note: (1) This action can be customized. (2) It is recommended to use controller version 10.118.120 and later, the start time/total time after customization of the lower version will be abnormal.	
2	Automatic work record generation method. (For reference only) Use Backgnd.xml component and assign R5998 to trigger the action. As shown in the figure.	

No	Steps specifications	Schematic diagram																																																			
3	Place the set Backgnd.xml component in the specified location. DiskC\OpenCnc Shared\OCRes\Common\AppData																																																				
4	Compile MACRO, such as using G0800 to conduct the value of R5998, where G10 is used. As shown in the figure.	 <pre> *G0800 - 记事本 文件(E) 编辑(E) 格式(O) 查看(V) 帮助(H) %@ MACRO G10L1000 P5998 R98; G04 X4.; G10L1000 P5998 R0; G04 X3.; M99; </pre>																																																			
5	Place G0800 inside the NC file or other locations, and it will trigger the action of generating work records when G0800 is executed.																																																				
6	Set the controller M code work count, the parameter is Pr3804. Note: The value of Pr3804 should be consistent with the NC program M code, for example, if Pr3804=123, then there should be M123 in the NC program before it carries on counting.	 CNC Monitor v10.118.14H <table border="1"> <thead> <tr> <th>编号</th> <th>说明</th> <th>数值</th> </tr> </thead> <tbody> <tr><td>3734</td><td>*第三组轴交换第二轴偏移量</td><td>0</td></tr> <tr><td>3735</td><td>*第三组轴交换反向</td><td>0</td></tr> <tr><td>3736</td><td>*第四组轴交换轴号第一轴</td><td>0</td></tr> <tr><td>3737</td><td>*第四组轴交换轴号第二轴</td><td>0</td></tr> <tr><td>3738</td><td>*第四组轴交换第一轴偏移量</td><td>0</td></tr> <tr><td>3739</td><td>*第四组轴交换第二轴偏移量</td><td>0</td></tr> <tr><td>3740</td><td>*第四组轴交换反向</td><td>0</td></tr> <tr><td>3801</td><td>G95时进给量与主轴位置紧密配合</td><td>0</td></tr> <tr><td>3802</td><td>内定高精度模式(0:G04,T,G02,ZRP/C/C)</td><td>0</td></tr> <tr><td>3804</td><td>工件计数M码编号</td><td>123</td></tr> <tr><td>3805</td><td>静态吸屑检测灵敏度时间(ms)</td><td>1000</td></tr> <tr><td>3806</td><td>第二轴B轴(0:不启动,1:启动)</td><td>0</td></tr> <tr><td>3807</td><td>圆弧终点不在圆弧上检查窗口(BLU)</td><td>5</td></tr> <tr><td>3808</td><td>高精度平滑性(0:关闭,1:平滑性最高,9:精度最高)</td><td>0</td></tr> <tr><td>3809</td><td>*是否UVW为XYZ轴增量命令(0:否,1:是)</td><td>0</td></tr> <tr><td>3810</td><td>*启动同一单节M code同时执行功能(0:否,1:是)</td><td>0</td></tr> </tbody> </table> *001_18_01_01.nc - 记事本 <pre> 文件(E) 编辑(E) 格式(O) 查看(V) 帮助(H) G0 X732.500 Y2402.500 Z38.000 Z30.0 M123 G800 M99 </pre>	编号	说明	数值	3734	*第三组轴交换第二轴偏移量	0	3735	*第三组轴交换反向	0	3736	*第四组轴交换轴号第一轴	0	3737	*第四组轴交换轴号第二轴	0	3738	*第四组轴交换第一轴偏移量	0	3739	*第四组轴交换第二轴偏移量	0	3740	*第四组轴交换反向	0	3801	G95时进给量与主轴位置紧密配合	0	3802	内定高精度模式(0:G04,T,G02,ZRP/C/C)	0	3804	工件计数M码编号	123	3805	静态吸屑检测灵敏度时间(ms)	1000	3806	第二轴B轴(0:不启动,1:启动)	0	3807	圆弧终点不在圆弧上检查窗口(BLU)	5	3808	高精度平滑性(0:关闭,1:平滑性最高,9:精度最高)	0	3809	*是否UVW为XYZ轴增量命令(0:否,1:是)	0	3810	*启动同一单节M code同时执行功能(0:否,1:是)	0
编号	说明	数值																																																			
3734	*第三组轴交换第二轴偏移量	0																																																			
3735	*第三组轴交换反向	0																																																			
3736	*第四组轴交换轴号第一轴	0																																																			
3737	*第四组轴交换轴号第二轴	0																																																			
3738	*第四组轴交换第一轴偏移量	0																																																			
3739	*第四组轴交换第二轴偏移量	0																																																			
3740	*第四组轴交换反向	0																																																			
3801	G95时进给量与主轴位置紧密配合	0																																																			
3802	内定高精度模式(0:G04,T,G02,ZRP/C/C)	0																																																			
3804	工件计数M码编号	123																																																			
3805	静态吸屑检测灵敏度时间(ms)	1000																																																			
3806	第二轴B轴(0:不启动,1:启动)	0																																																			
3807	圆弧终点不在圆弧上检查窗口(BLU)	5																																																			
3808	高精度平滑性(0:关闭,1:平滑性最高,9:精度最高)	0																																																			
3809	*是否UVW为XYZ轴增量命令(0:否,1:是)	0																																																			
3810	*启动同一单节M code同时执行功能(0:否,1:是)	0																																																			

No	Steps specifications	Schematic diagram
7	When M123 (work count) and G800 (generating work record) are placed in the NC program of the profile, then when this program is executed, a machining record will be generated. As shown in the figure.	

Contents of the old documents

Word record table can be customized by XML

Available version: 10.116.3, 10.116.0D, 10.114.56C

Display content of work record table

Work record table is saved by using Cycle Editor, so it is needed to define other Schema. The standard definition path: StdMMIRes\Common\Schema\Schema_WorkRecord.xml. User can copy that file to OCRES according path (OCRes\Common\Schema\ Schema_WorkRecord.xml) for customization purpose.

To meet user demand, the Field in Schema is added <Storage> information that can defined register R as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<Schema>
  <Cycle name="CycleEdit">
    <Field>
      <Name>Col_User</Name>
      <InputFormat>String</InputFormat>
      <Length>20</Length>
      <Storage>R4010</Storage>
    </Field>
  </Cycle>
</Schema>
```

Once above example is executed, it will automatically write R4010 value in work record table.

Work record table page

Work record table page is defined in "StdMMIRes\Common\AppData\XML_WorkRecord.xml", user can copy this file to OCRes (OCRes\Common\AppData) to customize.

Condition to update work record table

User can set conditions to do ACTION for updating work record table, in which ACTION is "DoAddWorkRecord".

P.S. when part count is 0, this action is invalid.

3 SBTTool Operation Manual

 中文版 Mandarin Version: SBTTool 操作手册

3.1 Preface

- Syntec Backup Tool (SBTTool) provides:
 1. Remote system backup
 2. Remote system restore

3.2 Requirement

- Software version : 10.118.22H, 10.118.27 (or later)
- A Smart Machine Box (SMB) connected to CNC.

3.3 Caution

- DO NOT use SBTTool when system is machining.
- DO NOT close SBTTool during remote system backup or remote system restore.
- There is no prompt on CNC when doing remote system backup or doing remote system restore. Operating CNC simultaneously is not recommended.

3.4 Contents

 After unzipping SBTTool.zip, the files are shown below:

桌面 > SBTTool >			
名稱	修改日期	類型	大小
Bin	2020/6/22 下午 0...	檔案資料夾	
SBBBackup	2020/6/22 下午 0...	檔案資料夾	
SBRestore	2020/6/22 下午 0...	檔案資料夾	
IP.txt	2020/6/22 下午 0...	文字文件	1 KB
SBBBackup.bat	2020/6/22 下午 0...	Windows 批次檔案	1 KB
SBRestore.bat	2020/6/22 下午 0...	Windows 批次檔案	1 KB

1. Bin folder: The executable and DLL files are stored in the folder.
2. SBBackup folder: The output backup file will be stored in the folder. The backup file is named "Backup_SB_CRC code.zip", e.g. Backup_SB_3a6b72b7.zip.
3. SBRestore folder: The input restore file needs to be stored in this folder.
4. SBBackup.bat: You can double-click the file to perform SB backup.
5. SBRestore.bat: You can double-click the file to perform SB restore.
6. IP.txt: It's a file for setting the IP address.

i After execution, the files are shown below:

桌面 > SBTool >

名稱	修改日期	類型	大小
Bin	2020/6/22 下午 0...	檔案資料夾	
SBBackup	2020/6/24 下午 0...	檔案資料夾	
SBRestore	2020/6/23 上午 1...	檔案資料夾	
Error.txt	2020/6/24 下午 0...	文字文件	1 KB
IP.txt	2020/6/24 下午 0...	文字文件	1 KB
Result.txt	2020/6/24 下午 0...	文字文件	1 KB
SBBackup.bat	2020/6/24 下午 0...	Windows 批次檔案	1 KB
SBRestore.bat	2020/6/23 上午 1...	Windows 批次檔案	1 KB

1. Result.txt:
The file is generated after SB backup or restore is completed.
If performed successfully, the content of this file will be "SB Backup (Restore) Successful".
Otherwise the content will be "SB backup(Restore) Fail".
2. Error.txt:
This file is generated only when SB backup or restore fails, and error messages will be recorded.

3.5 Procedure

i Please download SBTool on Syntec official website:

- URL: <http://www.syntecclub.com/Download.aspx>
- Path: Downloads => 04.Application Tool => SBTool

i Set IP address for connection initialization

1. SBTool can be used completely independently, just fill in the CNC IP in IP.txt.
2. If you place the SBTool in the specified directory in a simulator folder, it will automatically obtain the CNC IP (by reading DipoleSettings.xml), so you will not need to set IP.

Here is an illustration of the path of the SBtool. Place the SBtool folder in the same directory as the DiskC folder.



✓ Execute SB backup:

1. Double-click SBBBackup.bat, and wait for the percentage finish.
Then the screen will display "SB Backup complete!", indicating that the execution is complete.

```
16:21:17 Trying to read DipoleSettings.xml...
16:21:17 Trying to read IP.txt...
16:21:17 IP = 10.10.40.143
16:21:17 Trying to connect to CNC...
16:21:26 Connect Success!
16:21:26 Start to Backup. Please DO NOT close this window...
16:25:41 Progress: 99 %
16:25:45 SB Backup complete!
請按任意鍵繼續 . . .
```

2. The output backup file will be generated in the SBTool\SBBBackup folder.

✓ Execute SB restore:

1. Put the SB backup file under the SBTool\SBRestore folder.
2. Double-click SBBBackup.bat, and wait for the percentage finish.
Then the screen will display "SB Restore complete! Please restart CNC".

```
10:26:12 Trying to read DipoleSettings.xml...
10:26:12 Trying to read IP.txt...
10:26:12 IP = 10.10.40.137
10:26:12 Trying to connect to CNC...
10:26:13 Connect Success!
10:26:13 Start to Restore. Please DO NOT close this window...
10:28:53 Progress: 100 %
10:28:53 SB Restore complete! Please restart CNC
請按任意鍵繼續 . . .
```

3. Please restart CNC and complete SB restore.

3.6 Troubleshooting

If the screen displays red error messages and Error.txt is generated, please refer to the following troubleshooting methods:

- **「Fail to get IP」 :**
This means that the IP address in DipoleSettings.xml or IP.txt cannot be read. Please refer to the "Set IP address" above to reset IP and also check whether the IP format is correct.
If you re-enter the IP directly on the screen, SBTool will automatically reconnect and save the new IP to IP.txt.
- **「Fail to connect to CNC」 :**
Please check the CNC network status or check whether the IP is correct.
If you re-enter the IP directly on the screen, SBTool will automatically reconnect and save the new IP to IP.txt.
- **「SB Backup Fail」 :**
This means that the CNC rejected the backup request, which may be caused by the busy CNC, or SBTool was mistakenly closed during the last execution (Please restart the CNC).
- **「SB Restore Fail」 :**
This means that the CNC rejected the restore request, which may be caused by the busy CNC, or SBTool was mistakenly closed during the last execution (Please restart the CNC).
- **「SB Restore Fail: Please check Restore folder.」 :**
Please make sure that only one file exists in the SBRestore folder.
- **「SB Restore Fail: CRC check error」 :**
Please make sure the CRC code of the file name is correct.



SYNTEC

4 Data Aggregators Application Manual

📘 中文版 Mandarin Version: 资料记录器应用手册

4.1 Catalog:

- [Catalog:](#)
- [Introduction:](#)
- [Specifications:](#)
- [User guide:](#)
- [Constraints:](#)
- [Notifications:](#)

4.2 Introduction:

Currently, the Data Logs and Operation Logs play great roles in providing information on system status and user operations by routine recording. When it comes to issues about troubleshooting, behavior tracking, or long term reliability analysis, it seems nothing to do with these two recorders. It's also infuriating that analysts have to tell the key information from massive amounts of the data files by files.

The brand new **Data Aggregators** make great improvement of the disadvantages above and aim for the following three subjects.

1. 4.2.1 Problem shooting :

ngineers

Under specific critical alarms, such as the loss pulse alarm(MOT-8) and motor overload alarm(AL-202), the CNC machine would execute an emergency stop, and break the machining process instantly. It might be helpful to analyze the history of data like machine position, loading factor of motors, following errors, etc. This information can help our erecognize machine behavior and furtherly solve the problem.

2. 4.2.2 CNC Machine Runtime Diagnosis:

Supports macro operation. You can activate the service data aggregator to grasp the historic record of target data by just adding a macro command "G10 L1100 P1007". The aggregator collects information like IGBT temperature of motors, capacities temperature of drives, the voltage of encoders, etc. We can also provide standard MACRO, for example, the warm-up subprogram, using the macro command, and made a warm-up record every time it works.

3. 4.2.3 CNC Machine Reliability Data Base:

malfunction prediction, and behavior diagnosis, etc. These indicators can go a step further to help the developers improve the design of products by showing the defects.

The daily data aggregator keeps acquiring the reliability indicators of the CNC machine minutes by minutes. These records can serve as the database of hardware reliability analysis,

4.3 Specifications:

- These data aggregators would persist in acquiring the monitoring data as long as the controller is running and keep the data histories for a period of time.
- For different purposes, the data aggregators have a variety of settings with each other. The following paragraph will show you the configurations of the three different data aggregators.

Alarm Data Aggregator

Service Data Aggregator

Daily Data Aggregator

Period of Data Catching:

- 200 milliseconds

Maximum Recording Length:

- 4 minutes

Triggering Exportation Conditions:

- The aggregator would perform the exportation process when the following alarms arise.

Alarm	Condition	Alarm Info.
MOT-008	any axis	Loss Pulse
MOT-087	any axis	Inaccurate stop position. Please check if there are any mechanisms stuck
MOT-019	any axis	Following error exceed
MOT-023	any axis	Fatal following error exceed
AL-100	Drive Alarm	IGBT Overheat
AL-110	Drive Alarm	Critical Over Voltage
AL-111	Drive Alarm	Low Voltage
AL-120	Drive Alarm	Driver Over Current
AL-121	Drive Alarm	Power Module Over Current
AL-202	Drive Alarm	Motor Overload
AL-203	Drive Alarm	Motor Stuck
AL-521	Drive Alarm	Excessive Following Error

Alarm	Condition	Alarm Info.
AL-550	Drive Alarm	Unexpected disturbance torque
AL-910	Drive Alarm	IGBT High Temperature
AL-94B	Drive Alarm	Position command error
AL-E30	Drive Alarm	Position command error

Note: Drive alarm includes using M3 and EtherCAT communication.

Exportation Behavior:

If the controller is powered off before 2 seconds have elapsed after the alarm occurs, the file will not be recorded.

If the controller is powered off before 80 seconds have elapsed after the alarm occurs, the file at this time will be the data history of the past 238 seconds and the next 2 seconds (a total of 4 minutes), as well as the alarm name of the "registered alarm" that occurred within the next 2 seconds. with absolute time.

If the controller has not been powered off for 80 seconds after the alarm occurs, the file at this time is the data history of the past 160 seconds and the next 80 seconds (4 minutes in total), as well as the alarm name and alarm name of the "registered alarm" that occurred in the next 80 seconds. Absolute time.

Note: Additional alarms within this 80 seconds will not trigger another recording. If the registered alarm occurs again after 80 seconds, the next record will be triggered and output in another file.

- Whenever a registered alarm arises, the aggregator would start to backup:
 - If the controller is powered off within 2 seconds after an alarm occurs, no files will be recorded.
 - If the controller is powered off within 80 seconds after the alarm occurs, the file contain the trace of the monitoring data from the **238 seconds before alarm** to the **2 seconds after alarm** (a total of 4 minutes), as well as the alarm name and alarm occurrence time of the "registered alarm" that occurred within **2 seconds after alarm**.
 - If the controller has not been powered off within 80 seconds after the alarm occurs, the file contain the trace of the monitoring data from the **160 seconds before alarm** to the **80 seconds after alarm** (a total of 4 minutes), as well as the alarm name and alarm occurrence time of the "registered alarm" that occurred within the **80 seconds after alarm**.

Note: Any other alarm occurs within these 80 seconds won't trigger another exportation process.

- For every exportation, the aggregator would **create a new file** with the triggering time written on the file name.
- The error record includes nothing but the error message and is saved as a file individually.

Monitoring Data:

- The following table contains the monitoring data of an alarm data aggregator(1~3Axis):

No.	Target Channel	Target Data	Source	Interpretation
1	1 st Axis	Machine Position	Controller	--
2	1 st Axis	Torque Load	Controller	R Register No.5151

No.	Target Channel	Target Data	Source	Interpretation
3	1 st Axis	Following error	Controller	System Data No.8
4	2 nd Axis	Machine Position	Controller	--
5	2 nd Axis	Torque Load	Controller	R Register No.5152
6	2 nd Axis	Following error	Controller	System Data No.9
7	3 rd Axis	Machine Position	Controller	--
8	3 rd Axis	Torque Load	Controller	R Register No.5153
9	3 rd Axis	Following error	Controller	System Data No.10
10	1 st Spindle	Torque Load	Controller	R Register No.5141
11	1 st Spindle	DC Bus Voltage	Drive	Drive Status Monitoring Variable No.D38

- The following table contains the monitoring data of an alarm data aggregator(4~6Axis):

No.	Target Channel	Target Data	Source	Interpretation
1	4 st Axis	Machine Position	Controller	--
2	4 st Axis	Torque Load	Controller	R Register No.5154
3	4 st Axis	Following error	Controller	System Data No.163
4	5 nd Axis	Machine Position	Controller	--
5	5 nd Axis	Torque Load	Controller	R Register No.5155
6	5 nd Axis	Following error	Controller	System Data No.164

No.	Target Channel	Target Data	Source	Interpretation
7	6 rd Axis	Machine Position	Controller	--
8	6 rd Axis	Torque Load	Controller	R Register No.5156
9	6 rd Axis	Following error	Controller	System Data No.165
10	2 st Spindle	Torque Load	Controller	R Register No.5142
11	2 st Spindle	DC Bus Voltage	Drive	Drive Status Monitoring Variable No.D38

Alarm Data Aggregator

[Service Data Aggregator](#)

Daily Data Aggregator

Period of Data Catching:

- 1 second

Maximum Recording Length:

- 20 minutes

Triggering Exportation Conditions:

- Execute G-Code command "**G10 L1100 P1007**".

Exportation Behavior:

- The aggregator would backup the trace of monitoring data within the **past 20 minutes** and waiting for exportation.
- The aggregator processes exporting the record at the end of a minute, thus the record will **NOT** be created right after the events are triggered.
(※ If the controller is shut down right after the trigger events, the record might not get saved.)
- For every exportation, the aggregator would **create a new file** with the triggering time written on the file name.
- In multiple-triggering cases, the aggregator would export **ONLY** one record by the last trigger within a minute.
- The error record includes nothing but the error message and is saved as a file individually.

Monitoring Data:

- The following table contains the monitoring data of a service data aggregator:

No.	Target Channel	Target Data	Source	Interpretation	Limitation
1	1 st Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
2	2 nd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
3	3 rd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
4	1 st Spindle	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
5	1 st Spindle	Power Stage Main Capacitance Temperature	Drive	Status Monitoring Variable No.DB0	The drive must support an MCU of the Power Stage Capacitance.
6	1 st Spindle	Encoder Internal Temperature	Drive	Status Monitoring Variable No.D61	
7	1 st Spindle	Encoder External_1 Temperature	Drive	Status Monitoring Variable No.D62	Syntec Encoder only.
8	1 st Spindle	The 5V Detection of 1st Encoder	Drive	Status Monitoring Variable No.D70	Syntec Encoder only.

[Alarm Data Aggregator](#)
[Service Data Aggregator](#)
[Daily Data Aggregator](#)
Period of Data Catching:

- 1 minute

Maximum Recording Length:

- 1 day

Triggering Exportation Conditions:

- Automatically records on the hour and half hour of the local time.

Exportation Behavior:

- The aggregator would take the trace of monitoring data within the **past 30 minutes** and export the data into a record.

- The data **of the same date** would get exported to **the same record**, by appending the data to the end of previous data.
And a new record will be created when there is no file of the same date.
Both of the situations will the aggregator edits the time stamp on the file name by the recording time of the last data.
- The error record includes no data info but the error message. It might **overwrite** the previous record of the same date.

Monitoring Data:

- The following table contains the monitoring data of a daily data aggregator.

Software version: from 10.118.88K, 10.120.18K, 10.120.32R, 10.120.42F, 10.120.47, 12.0.5

Daily					Daily2					Daily3				
N o.	Tar get Channel	Targ et Data	So ur ce	Va ria bl e	N o.	Targ et Channel	Targ et Data	So ur ce	Va ria bl e	N o.	Tar get Channel	Target Data	So ur ce	Va ria bl e
1	1 st Axis	IGBT Temperature	Drive	D37	1	5 th Axis	IGBT Temperature	Drive	D37	1	1 st Station	DSP Temperature	Drive	EAC
2	1 st Axis	Load Factor	Drive	D2A	2	5 th Axis	Load Factor	Drive	D2A	2	1 st Station	DC Bus Voltage	Drive	D38
3	1 st Axis	Speed Feedback	Drive	D27	3	5 th Axis	Speed Feedback	Drive	D27	3	1 st Spindle	IGBT Temperature	Drive	D37
4	2 nd Axis	IGBT Temperature	Drive	D37	4	6 th Axis	IGBT Temperature	Drive	D37	4	1 st Spindle	Load Factor	Drive	D2A
5	2 nd Axis	Load Factor	Drive	D2A	5	6 th Axis	Load Factor	Drive	D2A	5	1 st Spindle	Speed Feedback	Drive	D27

6	2 nd Axis	Speed Feed back	Drive	D27	6	6 th Axis	Speed Feedback	Drive	D27	6	1 st Spindle	Encoder Internal Temperature	Drive	D61
7	3 rd Axis	IGBT Temperature	Drive	D37	7	CNC System	CPU Temperature (Celsius)	Controller	D39	7	1 st Spindle	Encoder External 1 Temperature	Drive	D62
8	3 rd Axis	Load Factor	Drive	D2A										
9	3 rd Axis	Speed Feed back	Drive	D27										
10	4 th Axis	IGBT Temperature	Drive	D37										
11	4 th Axis	Load Factor	Drive	D2A										
12	4 th Axis	Speed Feed back	Drive	D27										
Daily4					Daily5					Daily6				
N o.	Target Channel	Target Data	Source	Variable	N o.	Target Channel	Target Data	Source	Variable	N o.	Target Channel	Target Data	Source	Variable

1	2 nd Station	DSP Temperature	Drive	EA C	1	3 rd Station	DSP Temperature	Drive	EA C	1	4 th Station	DSP Temperature	Drive	EA C
2	2 nd Station	DC Bus Voltage	Drive	D3 8	2	3 rd Station	DC Bus Voltage	Drive	D3 8	2	4 th Station	DC Bus Voltage	Drive	D3 8
3	2 nd Spindle	IGBT Temperature	Drive	D3 7	3	3 rd Spindle	IGBT Temperature	Drive	D3 7	3	4 th Spindle	IGBT Temperature	Drive	D3 7
4	2 nd Spindle	Load Factor	Drive	D2 A	4	3 rd Spindle	Load Factor	Drive	D2 A	4	4 th Spindle	Load Factor	Drive	D2 A
5	2 nd Spindle	Speed Feedback	Drive	D2 7	5	3 rd Spindle	Speed Feedback	Drive	D2 7	5	4 th Spindle	Speed Feedback	Drive	D2 7
6	2 nd Spindle	Encoder Internal Temperature	Drive	D6 1	6	3 rd Spindle	Encoder Internal Temperature	Drive	D6 1	6	4 th Spindle	Encoder Internal Temperature	Drive	D6 1
7	2 nd Spindle	Encoder External 1 Temperature	Drive	D6 2	7	3 rd Spindle	Encoder External 1 Temperature	Drive	D6 2	7	4 th Spindle	Encoder External 1 Temperature	Drive	D6 2

- Monitoring data for previous version
v1.3 (10.118.72A, 10.118.74N, 10.118.82L, 10.118.86E, 10.118.90A, 10.118.93 ~ 10.118.88J, 10.120.18J, 10.120.32Q, 10.120.42E, 10.120.45, 12.0.4)

Daily	Daily2	Daily3
--------------	---------------	---------------

N o .	Tar get Cha nnel	Targe t Data	S o ur ce	Va ri ab le	N o .	Tar get Cha nnel	Target Data	So ur ce	Va ri ab le	N o .	Tar get Cha nnel	Targ et Data	S o ur ce	Va ri ab le
1	1st Spi ndl e	IGBT Temp eratur e	Dr iv er	D3 7	1	1st Axis	IGBT Tempe rature	Dr iv er	D3 7	1	3rd Spi ndl e	IGBT Temp eratu re	Dr iv er	D3 7
2	1st Spi ndl e	Loadi ng Rate	Dr iv er	D2 A	2	2nd Axis	IGBT Tempe rature	Dr iv er	D3 7	2	3rd Spi ndl e	Loadi ng Rate	Dr iv er	D2 A
3	1st Spi ndl e	Speed Feedb ack	Dr iv er	D2 7	3	3rd Axis	IGBT Tempe rature	Dr iv er	D3 7	3	3rd Spi ndl e	Spee d Feed back	Dr iv er	D2 7
4	1st Spi ndl e	Encod er Intern al Temp	Dr iv er	D6 1	4	4th Axis	IGBT Tempe rature	Dr iv er	D3 7	4	3rd Spi ndl e	Enco der Intern al Temp	Dr iv er	D6 1
5	1st Spi ndl e	Encod er Extern al Temp	Dr iv er	D6 2	5	1st Stat ion	Rear Main Capaci tor Temp	Dr iv er	D B0	5	3rd Spi ndl e	Enco der Extern al Temp	Dr iv er	D6 2
6	2nd Spi ndl e	IGBT Temp eratur e	Dr iv er	D3 7	6	2nd Stat ion	Rear Main Capaci tor Temp	Dr iv er	D B0	6	4th Spi ndl e	IGBT Temp eratu re	Dr iv er	D3 7

7	2nd Spindle	Loading Rate	Driver	D2 A	7	1st Station	Rear Regeneration Resistor Temp	Driver	D B1	7	4th Spindle	Loading Rate	Driver	D2 A
8	2nd Spindle	Speed Feedback	Driver	D2 7	8	2nd Station	Rear Regeneration Resistor Temp	Driver	D B1	8	4th Spindle	Speed Feedback	Driver	D2 7
9	2nd Spindle	Encoder Internal Temp	Driver	D6 1	9	1st Station	DSP Temperature	Driver	EAC	9	4th Spindle	Encoder Internal Temp	Driver	D6 1
10	2nd Spindle	Encoder External Temp	Driver	D6 2	10	2nd Station	DSP Temperature	Driver	EAC	10	4th Spindle	Encoder External Temp	Driver	D6 2
11	1st Station	DC BUS Voltage	Driver	D3 8	11	1st Station	Battery Box Voltage	Driver	D4 2	11	3rd Station	DC BUS Voltage	Driver	D3 8
12	2nd Station	DC BUS Voltage	Driver	D3 8	12	CNC System	CPU Temperature	Controller	D3 9	12	4th Station	DC BUS Voltage	Driver	D3 8
Daily4					Daily5					Daily6				
No.	Target Channel	Target Data	Source	Variable	No.	Target Channel	Target Data	Source	Variable	No.	Target Channel	Target Data	Source	Variable

1	5th Axis	IGBT Temperature	Driver	D37	1	1st Axis	Encoder End Voltage	Driver	D70	1	1st Station	Fan Speed 1	Driver	DC0
2	6th Axis	IGBT Temperature	Driver	D37	2	2nd Axis	Encoder End Voltage	Driver	D70	2	1st Station	Fan Speed 2	Driver	DC1
3	3rd Station	Rear Main Capacitor Temp	Driver	DB0	3	3rd Axis	Encoder End Voltage	Driver	D70	3	2nd Station	Fan Speed 1	Driver	DC0
4	4th Station	Rear Main Capacitor Temp	Driver	DB0	4	4th Axis	Encoder End Voltage	Driver	D70	4	2nd Station	Fan Speed 2	Driver	DC1
5	3rd Station	Rear Regeneration Resistor Temp	Driver	DB1	5	1st Spindle	Encoder End Voltage	Driver	D70	5	3rd Station	Fan Speed 1	Driver	DC0
6	4th Station	Rear Regeneration Resistor Temp	Driver	DB1	6	2nd Spindle	Encoder End Voltage	Driver	D70	6	3rd Station	Fan Speed 2	Driver	DC1
7	3rd Station	DSP Temperature	Driver	EAC	7	3rd Spindle	Encoder End Voltage	Driver	D70	7	4th Station	Fan Speed 1	Driver	DC0

8	4th Station	DSP Temperature	Driver	EAC	8	4th Spindle	Encoder End Voltage	Driver	D70	8	4th Station	Fan Speed 2	Driver	DC1
9	1st Station	Battery Box Voltage	Driver	D42	9	5th Spindle	Encoder End Voltage	Driver	D70					
10	2nd Station	Battery Box Voltage	Driver	D42	10	6th Spindle	Encoder End Voltage	Driver	D70					
11	3rd Station	Battery Box Voltage	Driver	D42										
12	4th Station	Battery Box Voltage	Driver	D42										

v1.2 (10.118.40X, 10.118.42X, 10.118.48I, 10.118.52C, 10.118.54 ~ 10.118.70Z, 10.118.74M, 10.118.82K, 10.118.86D, 10.118.91)

No.	Target Channel	Target Data	Source	Interpretation	Limitation
1	CNC System	CPU Temperature (Celsius)	Controller	System Data No.39	
2	1 st Spindle	DC Bus Voltage	Drive	Status Monitoring Variable No.D38	
3	1 st Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
4	2 nd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	

N o.	Target Channel	Target Data	Source	Interpretation	Limitation
5	3 rd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
6	4 th Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
7	1 st Axis	Power Stage Main Capacitance Temperature	Drive	Status Monitoring Variable No.DB0	The drive must support an MCU of the Power Stage Capacitance.
8	1 st Spindle	Encoder External_1 Temperature	Drive	Status Monitoring Variable No.D62	Syntec Encoder only.
9	1 st Spindle	Encoder Internal Temperature	Drive	Status Monitoring Variable No.D61	
10	1 st Spindle	feedback Speed	Controller	R Register No.36	
11	1 st Spindle	Spindle Torque Load	Controller	R Register No.5141	
12	1 st Spindle	Power Stage Regen Capacitance Temperature	Drive	Status Monitoring Variable No.DB1	The drive must support an MCU of the Power Stage Capacitance.

v1.1 (10.118.32I, 10.118.40M, 10.118.41M ~ 10.118.40W, 10.118.42W, 10.118.48H, 10.118.52B)

N o.	Target Channel	Target Data	Source	Interpretation	Limitation
1	CNC System	CPU Temperature (Celsius)	Controller	System Data No.39	
2	1 st Spindle	DC Bus Voltage	Drive	Status Monitoring Variable No.D38	

N o.	Target Channel	Target Data	Source	Interpretation	Limitation
3	1 st Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
4	2 nd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
5	3 rd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
6	4 th Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
7	1 st Axis	Power Stage Main Capacitance Temperature	Drive	Status Monitoring Variable No.DB0	The drive must support an MCU of the Power Stage Capacitance.
8	1 st Spindle	Encoder External_1 Temperature	Drive	Status Monitoring Variable No.D62	Syntec Encoder only.
9	1 st Spindle	Encoder Internal Temperature	Drive	Status Monitoring Variable No.D61	
10	1 st Spindle	feedback Speed	Controller	R Register No.36	
11	1 st Spindle	Spindle Torque Load	Controller	R Register No.5141	

V1.0 (10.118.23X, 10.118.28L, 10.118.36 ~ 10.118.32H, 10.118.40L, 10.118.41L)

N o.	Target Channel	Target Data	Source	Interpretation	Limitation
1	CNC System	CPU Temperature (Celsius)	Controller	System Data No.39	

N o.	Target Channel	Target Data	Source	Interpretation	Limitation
2	CNC System	Substitute Interpolation Execution Times	Controller	System Data No.378	
3	1 st Spindle	DC Bus Voltage	Drive	Status Monitoring Variable No.D38	
4	1 st Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
5	2 nd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
6	3 rd Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
7	4 th Axis	IGBT Temperature	Drive	Status Monitoring Variable No.D37	
8	1 st Axis	Power Stage Main Capacitance Temperature	Drive	Status Monitoring Variable No.DB0	The drive must support an MCU of the Power Stage Capacitance.
9	1 st Spindle	Encoder External_1 Temperature	Drive	Status Monitoring Variable No.D62	Syntec Encoder only.
10	1 st Spindle	Encoder Internal Temperature	Drive	Status Monitoring Variable No.D61	
11	1 st Spindle	Enc CRC Error Count(SW)	Drive	Status Monitoring Variable No.D74	Syntec Encoder only.
12	1 st Spindle	feedback Speed	Controller	R Register No.36	

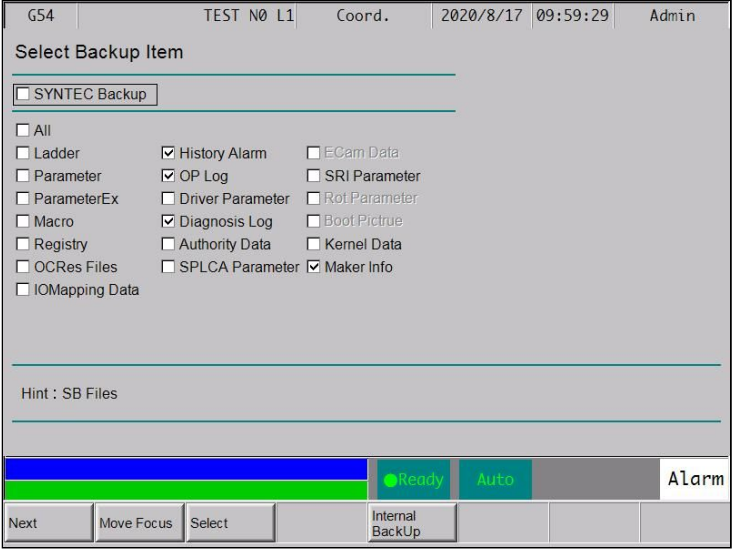
4.4 User guide:

- The records can be retrieved by Machine Backup(MB),

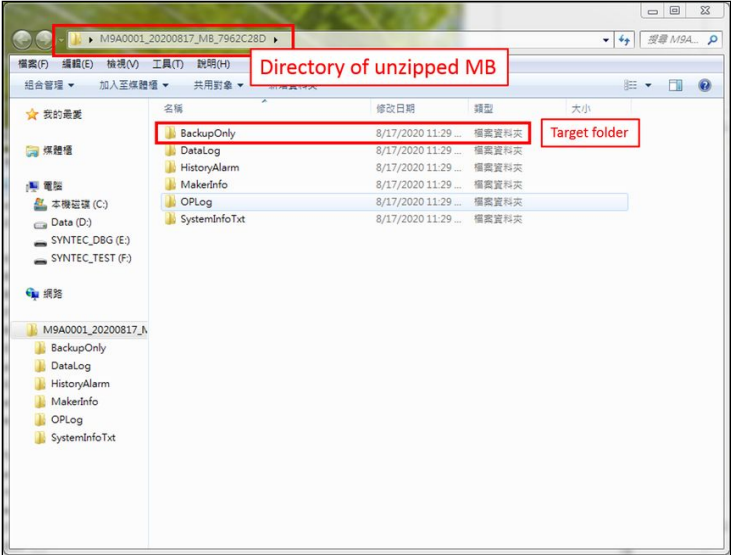
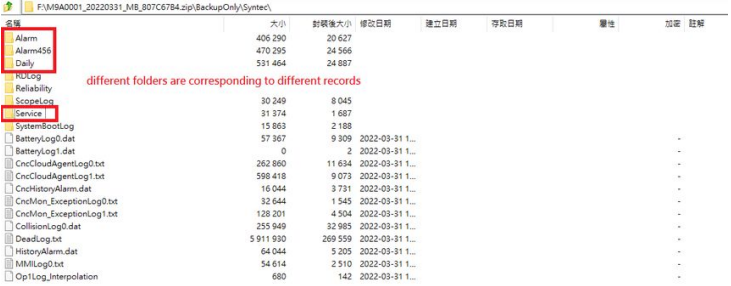
Directory	FileName
MB\BackupOnly\Syntec \Alarm: alarm record(1~3Axis) \Alarm456: alarm record(4~6Axis) \Service: service record \Daily: daily record	FileName_MMDDhhmm.csv MM: Month DD: Day hh: hour mm: minute for example: 。 Alarm_0510093029.csv (the time in the alarm(1~3Axis) file name will be recorded down to second) 。 Alarm456_0328164633.csv (the time in the alarm(4~6Axis) file name will be recorded down to second) 。 Service_05101730.csv 。 Daily_05102359.csv

- Overwrite when the file name is the same.
 - Alarm record: Keep up to 30 files for each directory.
 - Service record: Keep up to 10 files for each directory.
 - Daily record
 - Version before 10.118.88K, 10.120.18K, 10.120.32R, 10.120.42F, 10.120.47, 12.0.5: keep up to 10 files for each directory.
 - Version 10.118.88K, 10.120.18K, 10.120.32R, 10.120.42F, 10.120.47, 12.0.5 and after: keep up to 28 files for each directory.
- A guide to retrieve records from the controller and analyze by the tool: Syntec Analytics.

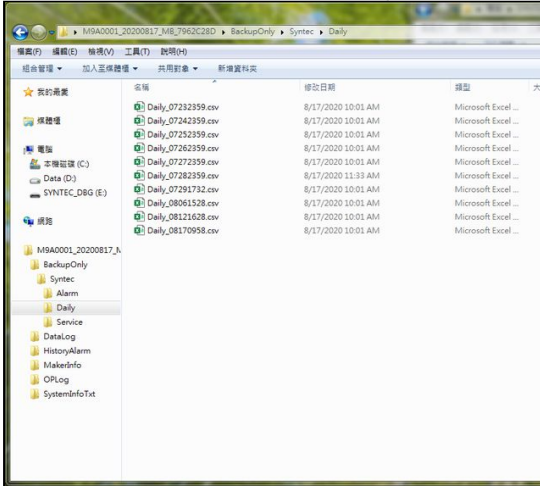
SYNTEC

Steps	Interpretation
Step 1. Retrieve Machine Backup (MB)	a. Run the Syntec Back-up System function to retrieve the records. Path: 【System Admin.】 → 【Backup Sys.】 b. The entrance page of the Syntec Back-Up System is shown below. You can select the Syntec standard backup or a customized one for different purposes. It should be noticed that the records of data aggregators are categorized as Auto-Backup Information. That is to say, no matter which option is chosen, the records would get backed up as long as the backup process starts. c. For quick back-up progress, you can choose only a few options. Such as the History Alarms, OP Log, Diagnosis Log, or Maker Info would be good choices. 

SYNTEC

Steps	Interpretation
Step 2. Find the records in the Backup.	a. Unzip the backup file, and you would get an overview of the directory as shown below. The BackupOnly folder contains the records of data aggregators.  b. Push to the directory: BackupOnly\Syntec, and you would find four folders, named (1) Alarm (2) Service (3) Daily (4) Alarm456. Each of them contains the records of the four data aggregators with the same name. 

SYNTEC

Steps	Interpretation
	c. For example, try to find a daily record by the date in which we are interested. The records have the timestamp of recording on its name, so it's  easy to find the record we need.
Step 3. Analyze the record.	With the Syntec Analytics - oscilloscope tool, we can import the record directly into the oscilloscope and make the line chart easily. Syntec Analytics - Oscilloscope  For more oscilloscope operating details, you can visit Syntec Analytics - Oscilloscope. ※ Syntec Analytics does support the data aggregators records interpretation from the version 2.1.16. The version should be checked first before performing data analysis by Syntec Analytics.

4.5 Constraints:

- Supported Controller Version: 10.118.23X, 10.118.28L, 10.118.36, and later.
- Supported Alarm record(4~6Axis) with Controller Version: 10.118.48P, 10.118.52J, 10.118.56D, 10.118.58 and later.
- Drive Status Monitoring Variables** are **ONLY** supported for **Syntec M3 Drives**.
That is to say, these variables **cannot** be retrieved with **non-Syntec M3 Drives**, and **WILL** always be 0 on record.

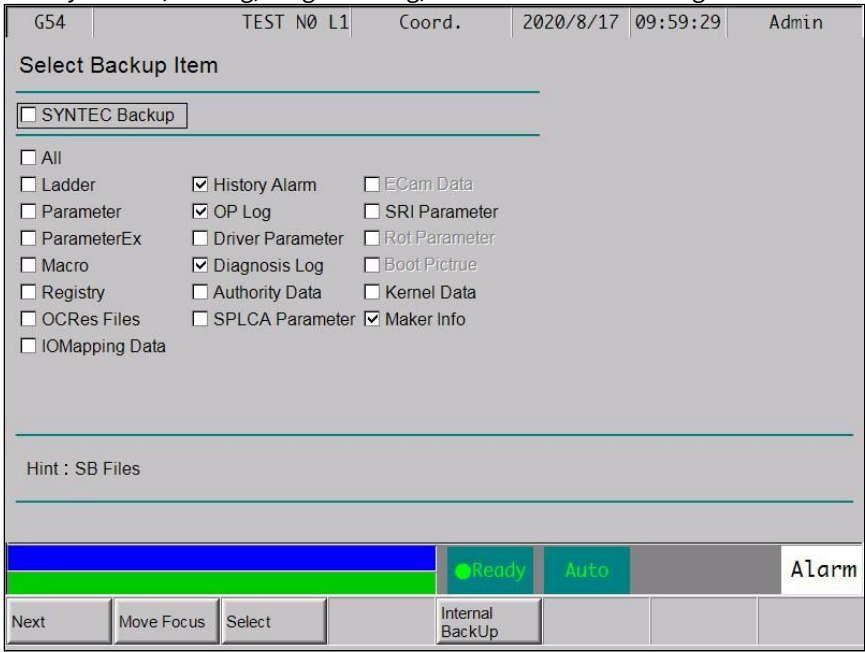
4.6 Notifications:

- Due to limited communication bandwidth, **Drive Status Monitoring Variables** may not be retrieved correctly under certain circumstances, as listed below. In such cases, data loss is recorded.
 - Display Page - Fast Diag.-Axes Data -Drive comm.**
 - Drive Firmware update:** The controller will disconnect with the drive after updating the drive firmware, causing the Drive Status Monitoring Variables to be unavailable. A reboot is required to regain access to Drive Status Monitoring Variables.
 - Encoder Firmware update**
 - Encoder-related Tuning Function**
- Error condition:
Up to this time, data aggregators neither have a diagnosis page nor notify runtime errors intuitively. But there are still two fatal errors that might put the control system at risk.
Therefore, when these errors show up, data aggregators would write the error message and temporarily inhibit themselves from exporting.
 - Insufficient disk space(less than 1MB)**
Before aggregators export data recorded to files, they will check the free space of the target disk first. The aggregators will overwrite the record with an error message and inhibit the following record exportation on the same date only if they meet the low disk space problem.
Error message: "Export Record Fail: Insufficient disk space. (less than 1 MB)"
 - Insufficient physical memories (less than 30 MB)**
At the startup of the controller, a memory protection process would be executed first before building the data aggregators in case of running out of memories.
Once the memory lackage happened, the data aggregators will export an error message individually and stop running until the system reboots.
Error message: "Register Kernel Scope Fail: Insufficient memory. (less than 30 MB)"
 -

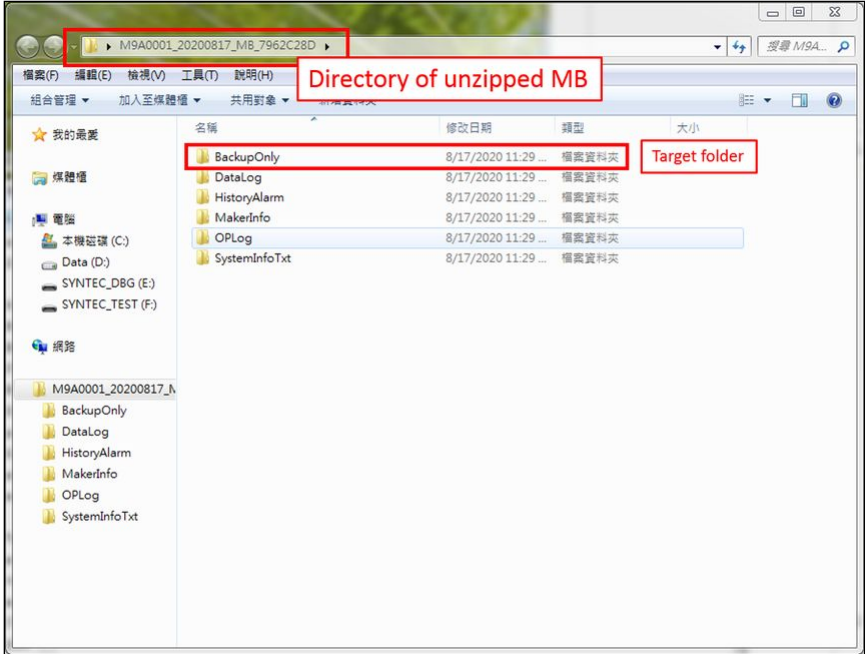
4.7 Data Aggregators User Guide

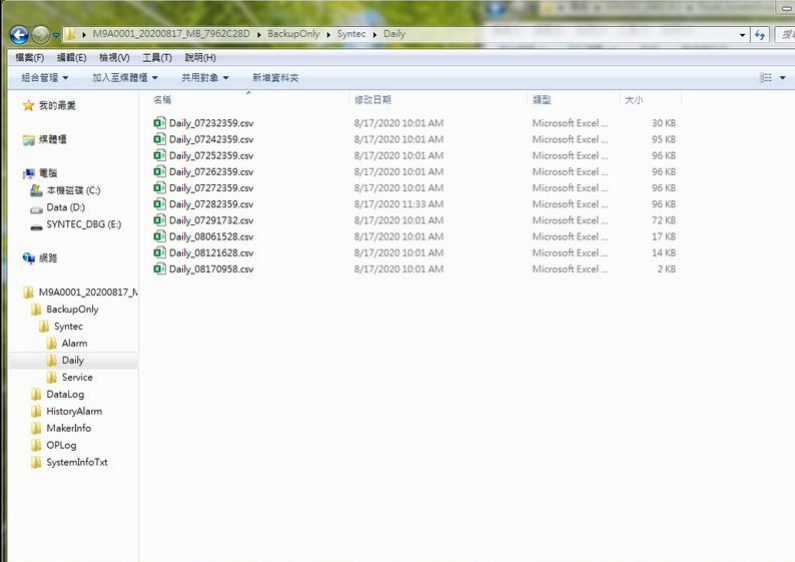
📘 中文版 Mandarin Version: 资料记录器-记录档操作手册

This manual will show you how to retrieve the records collected by the data aggregators.

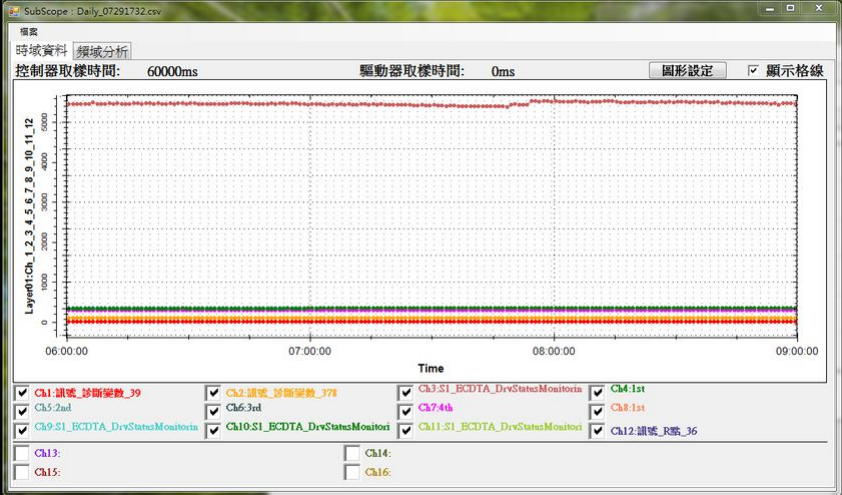
Steps	Interpretation
Step 1. Retrieve Machine Backup (MB)	1. Run the Syntec Back-up System function to retrieve the records. Path: 【System Admin.】 → 【Backup Sys.】 2. The entrance page of the Syntec Back-Up System is shown below. You can select the Syntec standard backup or a customized one for different purposes. It should be noticed that the records of data aggregators are categorized as Auto-Backup Information. That is to say, no matter which option is chosen, the records would get backed up as long as the backup process starts. 3. For quick back-up progress, you can choose only a few options. Such as the History Alarms, OP Log, Diagnosis Log, or Maker Info would be good choices. 

SYNTEC

Steps	Interpretation
Step 2. Find the records in the Backup.	1. Unzip the backup file, and you would get an overview of the directory as shown below. The BackupOnly folder contains the records of data aggregators.  2. Push to the directory: BackupOnly\Syntec, and you would find four folders, named (1) Alarm (2) Service (3) Daily (4) Alarm456. Each of them contains the records of the four data aggregators with the same name. 

Steps	Interpretation
	3. For example, try to find a daily record by the date in which we are interested. The records have the timestamp of recording on its name, so it's easy to find  the record we need.

SYNTEC

Steps	Interpretation
Step 3. Analyze the record.	With the Syntec Analytics - oscilloscope tool, we can import the record directly into the oscilloscope and make the line chart easily. Syntec Analytics - Oscilloscope  For more oscilloscope operating details, you can visit Syntec Analytics - Oscilloscope. ※ Syntec Analytics does support the data aggregators records interpretation from the version 2.1.16. The version should be checked first before performing data analysis by Syntec Analytics.

SYNTEC

5 Macro Editor Operation Manual

5.1 Marco Functions

5.1.1 **Screen Description**



The screenshot shows a window titled "Alarm string *" with a menu bar containing "檔案(F)". Below the menu bar is a function bar with a save icon. The main area is a table with two columns: "編號" (Number) and "警報字串" (Alarm string). The table contains two rows: one with "10000" and "警報10000號", and another with "10001" and "正在編輯警報10001". Below the table is a status bar. Labels with arrows point to the following components:

- 標題列 (Title bar)
- 功能列 (Function bar)
- 編輯區 (Edit area)
- 狀態欄 (Status bar)

編號	警報字串
10000	警報10000號
10001	正在編輯警報10001

狀態欄
Status bar

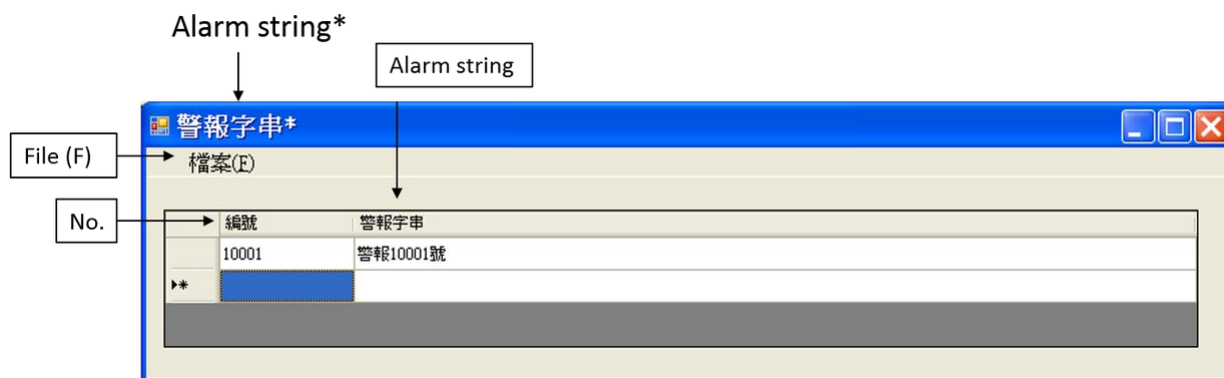
編輯區
Edit area

- 1. Title Bar**
Show the software name and whether it has been saved after modification (indicates by star sign)
- 2. Function Bar**
Currently provide saving function only
- 3. Edit Area**
The alarm no. and its corresponding string can be edited here
- 4. Status Bar**
Display the current status of the data, such as "Pencil: Line being edited", "Star sign: Newline", "Arrow: Selected line"

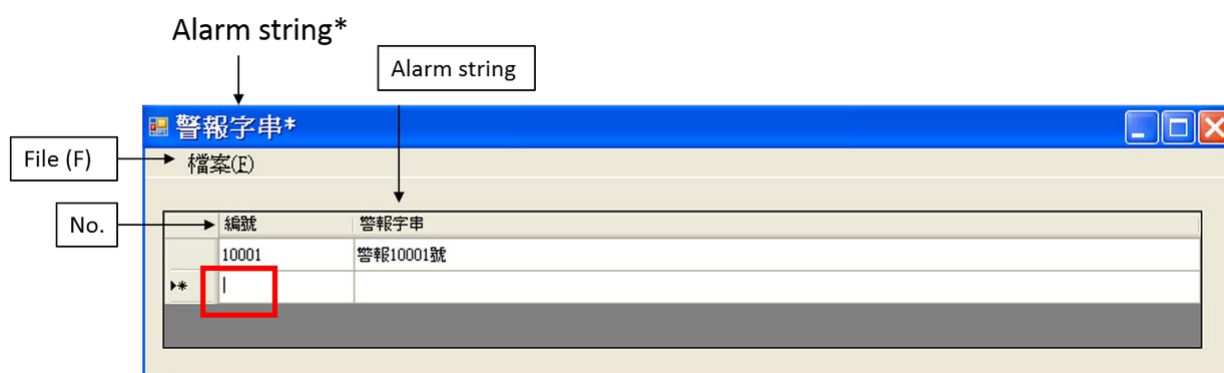
5.1.2 Function

Modification

Method 1: After clicking any field, input the string directly (it's more convenient to click once only)



Method 2: After double-clicking any field, enter the string (the edit cursor will appear, which is more intuitive)



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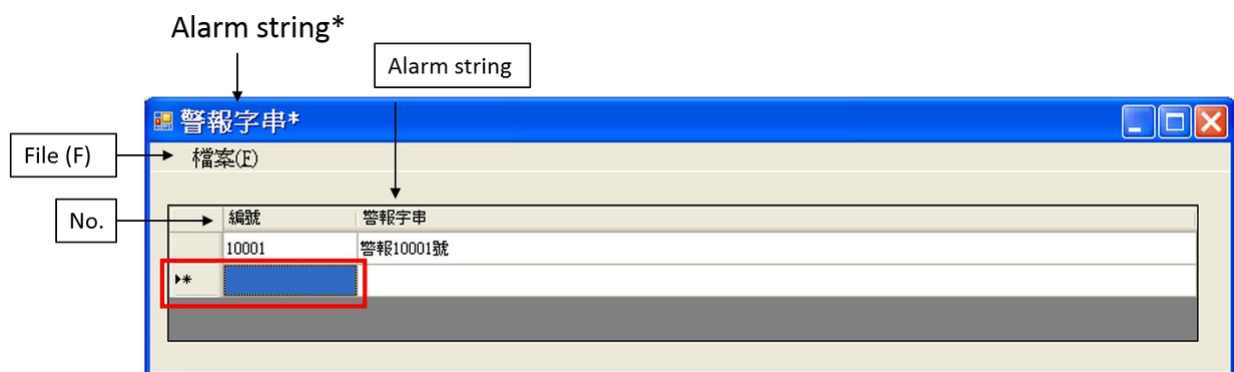
Delete a Piece of Data

Click the status bar, the line will be highlighted, and it will be removed after pressing "Delete"



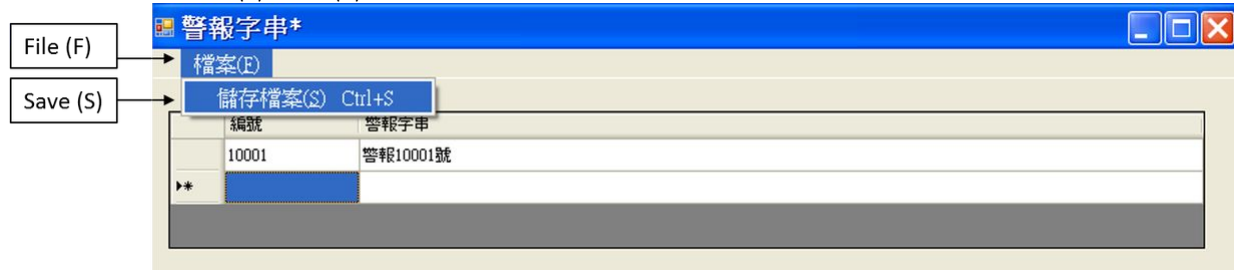
Add a Piece of Data

Click any row of the star sign to edit



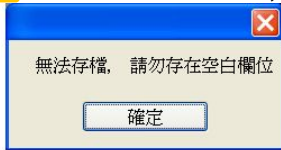
Save File

Method 1: Click "File (F)-Save (S)"



Method 2: Press "Ctrl+S"

! If there is a blank field, a prompt window will pop up and the file will not be saved



unable to save, please
don't leave a field blank

5.1.3 **Suggestion**

The standard/customized Macro alarm no. range has not yet been specified.

In order to avoid the conflict between the customized no. and the standard no., it is recommended that the user set the number to "10001~20000" while setting.

5.2 Marco Overview

5.2.1 **Software Introduction**

Currently, provide Macro alarm string editing function only.

If there are more Marco-related editing functions, in the future they will be included in this software.

5.2.2 **Environment**

No restrictions

5.2.3 **Installation and Removal**

When using the customized command set (Macro) function through SI for the first time, this software will be installed through SI, no need to do that by yourself.

5.2.4 **Warnings and Notifications**

This software must be operated with SI and is not valid when using alone (meaning double-click MacroEditor.exe by yourself).

If used alone, there will be no file loading function.



SYNTEC

6 AutoInitializer Operation Manual

Content

- [Introduction](#)
- [Notes](#)
- [Execution Environment Requirements](#)
- [Operation](#)
 - [Step 1. Download](#)
 - [Step 2. Insert the software installation pack](#)
 - [Step 3. Plug the USB into the controller and power on](#)
- [Initialize file content](#)
- [Log file](#)
- [Troubleshooting](#)

6.1 Introduction

- This tool can **automatically execute by plugging in the USB**. It can **initialize** the controller and **reset related settings**.
- This tool will format DISKC/DISK A, initialize Windows Registry, and **remove** all customized developing files (PLC/Parameters...).
- **This tool does not have built-in software installation package. The package of the corresponding controller must be installed before use, and the recommended software version is 10.116.24Z.**

6.2 Notes

- Please **do not remove the USB** while the tool is running, this action will cause serious damage to the system.
- If an unexpectedly power failure occurs, user can first try to **plug in the USB to reboot**. The system will **try to continue the initialization operation**. However, if an abnormal things occurs and the tool cannot operate, please send the controller back to Syntec and attach the Log file of the AutoInit folder in the USB.
- The software installation pack is to provide tools to **automatically determine the version** during execution and to **install automatically**.
- Please make sure that **there is only one installation pack in the AutoInit folder** before plugging in the USB to avoid system exceptions.
- AutoInitializer is a **disposable tool**, please download and use it again after use; otherwise, it will cause problems such as the failure of the panel shortcut keys.

6.3 Execution Environment Requirements

- **Software version** (must required):
 - 10.116.0B
- **image version** (suggested):
 - am35x > 7.2.0
 - am3354, no restrictions
 - **If the image version does not match above version, a power failure or other interruption occurs during the operation, the process may not be automatically repaired after power on.**
- **CPU:** Currently only supports AM335x, AM35x
- **OS:** WindowsCE7
- **Controller must be equipped with serial number.**

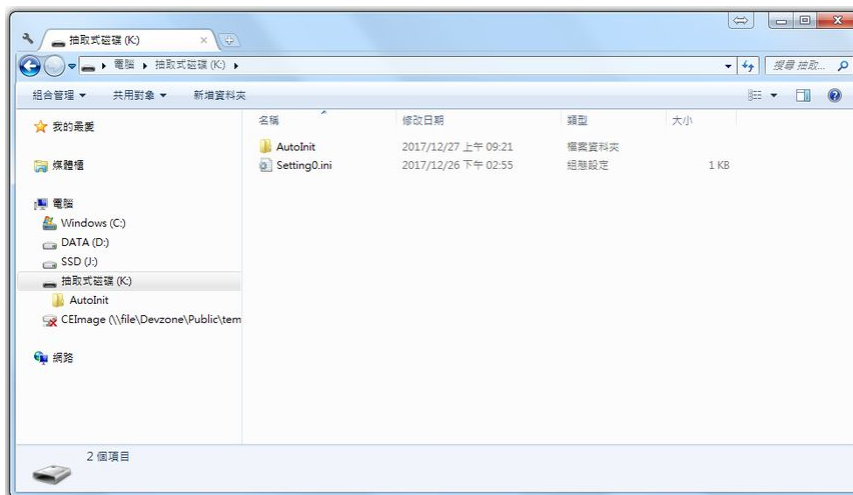
6.4 Operation

6.4.1 Step 1. Download

✓ Please download the tool from the official website:

- Link: <http://www.syntecclub.com/Download.aspx>
- Path: Download => 06. Other Tool => AutoInitializer

✓ Unzip the installation pack to the USB, and the files in your USB are as shown in the figure below:

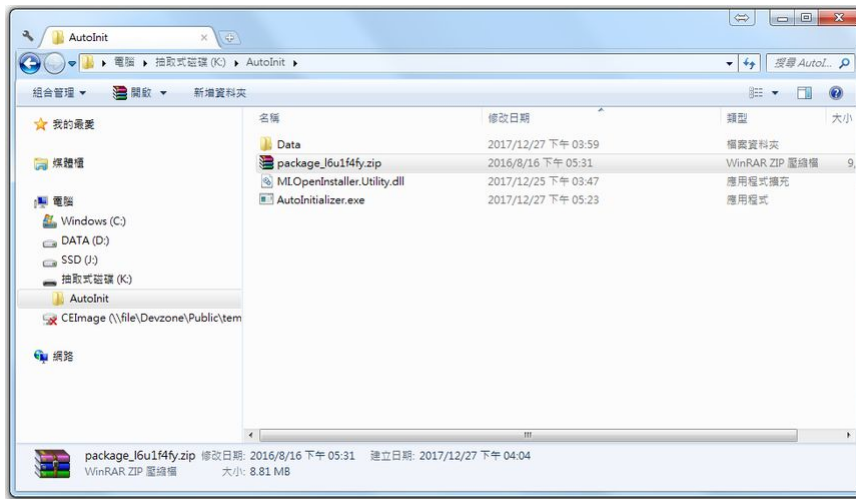


6.4.2 Step 2. Insert the software installation pack

✓ Please go to the official website to download the installation pack of the corresponding model

- Link: <http://www.syntecclub.com/Download.aspx>

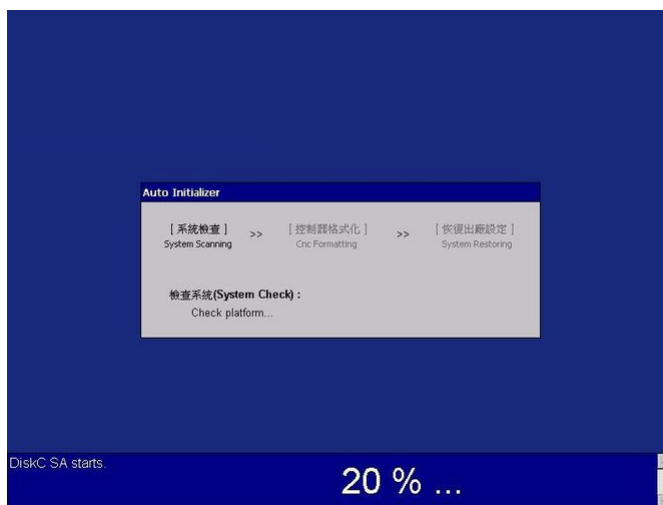
✓ Put the installation pack into the AutoInit folder of USB



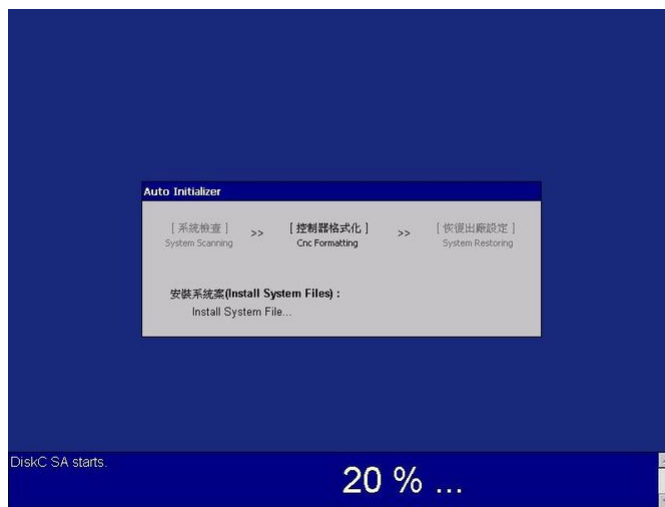
6.4.3 Step 3. Plug the USB into the controller and power on

✓ Please plug the USB into the controller before power off, this tool will execute automatically.

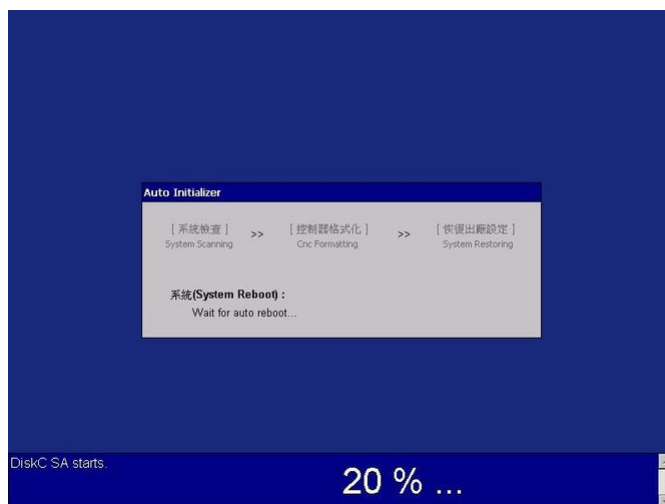
✓ System scanning (automatically)



✓ Cnc formatting (automatically)

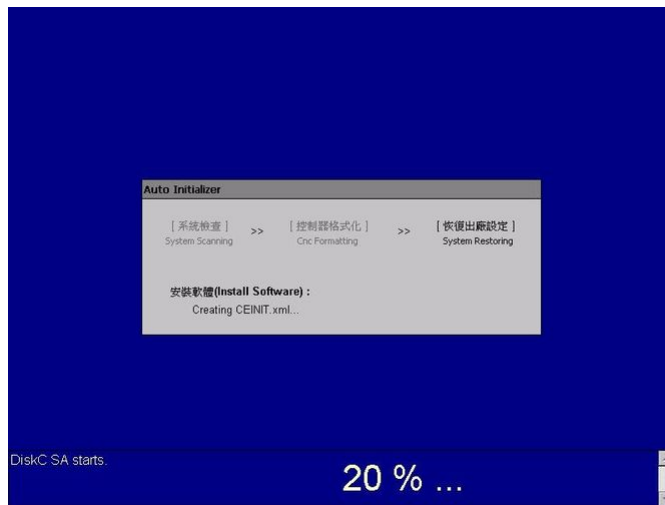


✓ System reboot (automatically)



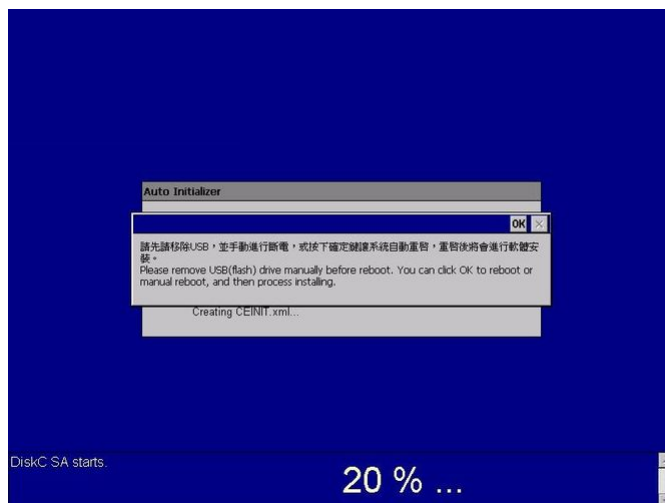
✓ Initialize (automatically)

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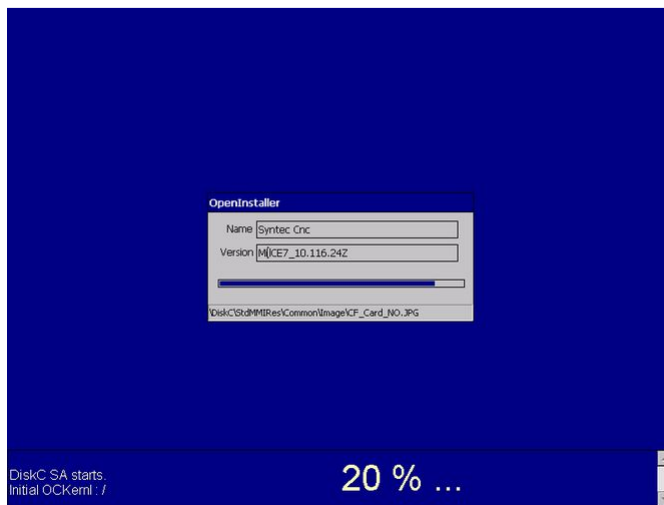


✔ Prompt the user to remove the USB (**manually**)

When this prompt pops up, please remove the USB first, and manually power off and rest turn on, or press "Enter" or click the OK button on the screen to reboot.



✔ Install the software (**automatically**)



- ✓ After the installation is done, the initialization of the controller is complete.

6.5 Initialize file content

- After the controller is initialized, the files in DiskA / DiskC will be removed and put into the files needed for system operation.
The following is the description of some of the inserted files.
 - Ladder
 - Site: AutoInit\Data\DiskC\OpenCNC\Ladder\Cnc.lad
 - Source: Ladder of the company's products before shipment
 - Parameter file
 - Site: AutoInit\Data\DiskC\OpenCNC\Data\param.dat
 - Source: 21MA product parameter default, and set "axis board no. corresponding to X axis" to 1 (Pr21=1)
 - The number of function key is restored to five keys
- If user wants to restore the customized parameter file/ladder after initialization, you can change the file according to the above site.
- Notes:
 - Replace the ladder/parameter file for initialization by yourself, please strictly confirm the correctness of the source file, otherwise it will cause serious problems such as unable to turn on the controller.
(If the above problem occurs after the operation, user can use the initialization tool without any replacement to try to initialize the system again)
 - Valid version: AutoInitializer_1.0.2

6.6 Log file

- When this tool is executed, the Log file will be generated in the AutoInit folder in the USB
- Log file name: **serial number_Log.txt**
- Content:
 - Execution time
 - Execution details
 - Record of execution mistakes
 - Record of controller related information

Title	Chinese
OS	作业系统
CPU	处理器
platform	平台
Kernel Version	软体版本
Product Version	产品版本
Machine Type	机床类别
Machine Module	机床属性
Serial number	序号
use time	使用期限
cnc option	软体功能选项
Maker ID	机械厂代码
NK Version	映像档版本

- Example:
[Click to expand](#)

2018-03-09 16:17:43
2018-03-09 16:17:43

System Check
Check OS is winodws CE...

2018-03-09 16:17:44	Check OS OK.
2018-03-09 16:17:44	Check OS version...
2018-03-09 16:17:44	Check OS version OK.
2018-03-09 16:17:44	Check platform...
2018-03-09 16:17:52	Check platform OK.
2018-03-09 16:17:52	Check cpu...
2018-03-09 16:17:52	Check cpu OK.
2018-03-09 16:17:52	Check serial number exist...
2018-03-09 16:17:52	Check serial number OK.
2018-03-09 16:17:52	System Check-Start
2018-03-09 16:17:52	Access CNC information
2018-03-09 16:17:52	Get OS Version...
2018-03-09 16:17:52	Get OS information...
2018-03-09 16:17:52	Get CPU Type...
2018-03-09 16:17:52	Get platform information...
2018-03-09 16:17:52	Get kernel version...
2018-03-09 16:17:52	Get product version...
2018-03-09 16:17:52	Get machine type...
2018-03-09 16:17:52	Get module type...
2018-03-09 16:17:52	Get serial...
2018-03-09 16:17:52	Get usetime infomation...
2018-03-09 16:17:52	Get cnc option infomation...
2018-03-09 16:17:52	Get Maker ID...
2018-03-09 16:17:52	Get NK version...
2018-03-09 16:17:52	Record CNC information
2018-03-09 16:17:52	Write CNC Information to Log file...
2018-03-09 16:17:52	* OS= WINDOWSCE_7
2018-03-09 16:17:52	* CPU= AM335x
2018-03-09 16:17:52	* Platform= ARM
2018-03-09 16:17:52	* KrnlVer= 10.116.54E
2018-03-09 16:17:52	* PrdVer= 10.116.54E
2018-03-09 16:17:52	* MachType= Mill
2018-03-09 16:17:52	* MachModule= 220A
2018-03-09 16:17:52	* SerialNo= M9A0001
2018-03-09 16:17:52	* UseTime= No Limit
2018-03-09 16:17:52	* CncOption=
2018-03-09 16:17:52	* MakerID=
2018-03-09 16:17:52	* NKVer= 7.49
2018-03-09 16:17:53	Installation Pack Check
2018-03-09 16:17:53	Find package in USB...
2018-03-09 16:19:07	System Check
2018-03-09 16:19:08	Check OS is winodws CE...
2018-03-09 16:19:08	Check OS OK.
2018-03-09 16:19:08	Check OS version...
2018-03-09 16:19:08	Check OS version OK.
2018-03-09 16:19:08	Check platform...
2018-03-09 16:19:16	Check platform OK.
2018-03-09 16:19:16	Check cpu...
2018-03-09 16:19:16	Check cpu OK.
2018-03-09 16:19:16	Check serial number exist...

```

2018-03-09 16:19:16      Check serial number OK.
2018-03-09 16:19:16 System Check-Start
2018-03-09 16:19:16 Access CNC information
2018-03-09 16:19:16     Get OS Version...
2018-03-09 16:19:16     Get OS information...
2018-03-09 16:19:16     Get CPU Type...
2018-03-09 16:19:16     Get platform information...
2018-03-09 16:19:16     Get kernel version...
2018-03-09 16:19:16     Get product version...
2018-03-09 16:19:16     Get machine type...
2018-03-09 16:19:16     Get module type...
2018-03-09 16:19:16     Get serial...
2018-03-09 16:19:16     Get usetime infomation...
2018-03-09 16:19:16     Get cnc option infomation...
2018-03-09 16:19:17     Get Maker ID...
2018-03-09 16:19:17     Get NK version...
2018-03-09 16:19:17 Record CNC information
2018-03-09 16:19:17     Write CNC Information to Log file...
2018-03-09 16:19:17     * OS= WINDOWSCE_7
2018-03-09 16:19:17     * CPU= AM335x
2018-03-09 16:19:17     * Platform= ARM
2018-03-09 16:19:17     * KrnlVer= 10.116.54E
2018-03-09 16:19:17     * PrdVer= 10.116.54E
2018-03-09 16:19:17     * MachType= Mill
2018-03-09 16:19:17     * MachModule= 220A
2018-03-09 16:19:17     * SerialNo= M9A0001
2018-03-09 16:19:17     * UseTime= No Limit
2018-03-09 16:19:17     * CncOption=
2018-03-09 16:19:17     * MakerID=
2018-03-09 16:19:17     * NKVer= 7.49
2018-03-09 16:19:17 Installation Pack Check
2018-03-09 16:19:17     Find package in USB...
2018-03-09 16:19:23     Check Package Platform...
2018-03-09 16:19:31     Check Package Platform OK.
2018-03-09 16:19:31     Check Package Model...
2018-03-09 16:19:31     Check Package Model OK.
2018-03-09 16:19:31     Check Package Machine Type...
2018-03-09 16:19:31     Check Package Machine OK.
2018-03-09 16:19:31 System Check-Finish
2018-03-09 16:19:31 System Formatting-Start
2018-03-09 16:19:31 Disk Formatting
2018-03-09 16:19:31     Format DiskA Part00...
2018-03-09 16:19:31     Find DSK2: Part00 partition...
2018-03-09 16:19:31     Find partition OK.
2018-03-09 16:19:31     Log partition information...
2018-03-09 16:19:31     * DSK2: Part00 volumeName= DiskA
2018-03-09 16:19:31     * DSK2: Part00 PartitionName= Part00
2018-03-09 16:19:31     * DSK2: Part00 FileSys= exfat.dll
2018-03-09 16:19:31     * DSK2: Part00 NumSectors= 130815
2018-03-09 16:19:31     * DSK2: Part00 PartType= 6

```

```

2018-03-09 16:19:31      Dismount partition...
2018-03-09 16:19:31      Dismount partition OK.
2018-03-09 16:19:31      Delete partition...
2018-03-09 16:19:32      Delete partition OK.
2018-03-09 16:19:32      Create partition...
2018-03-09 16:19:32      Create partition OK.
2018-03-09 16:19:32      Format DiskC Part01...
2018-03-09 16:19:32      Find DSK1: Part01 partition...
2018-03-09 16:19:32      Find partition OK.
2018-03-09 16:19:32      Log partition information...
2018-03-09 16:19:32      * DSK1: Part01 volumeName= DiskC
2018-03-09 16:19:32      * DSK1: Part01 PartitionName= Part01
2018-03-09 16:19:32      * DSK1: Part01 FileSys= exfat.dll
2018-03-09 16:19:32      * DSK1: Part01 NumSectors= 110720
2018-03-09 16:19:32      * DSK1: Part01 PartType= 6
2018-03-09 16:19:32      Dismount partition...
2018-03-09 16:19:33      Dismount partition OK.
2018-03-09 16:19:33      Delete partition...
2018-03-09 16:19:33      Delete partition OK.
2018-03-09 16:19:33      Create partition...
2018-03-09 16:19:33      Create partition OK.
2018-03-09 16:19:33      Install System Files
2018-03-09 16:19:34      Install System File...
2018-03-09 16:19:42      Copy :
\USBDisk\AutoInit\Data\DiskC\SB.EXE
2018-03-09 16:19:42      Copy :
\USBDisk\AutoInit\Data\DiskC\WELOCK.EXE
2018-03-09 16:19:43      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\ARIALBD.TTF
2018-03-09 16:19:43      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\arial_1_30.ttf
2018-03-09 16:19:44      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\COMIC.TTF
2018-03-09 16:19:44      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\COMICBD.TTF
2018-03-09 16:19:50      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\MINGLIU.TTC
2018-03-09 16:19:53      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\MONA.TTF
2018-03-09 16:19:53      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\MONACO.TTF
2018-03-09 16:20:04      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\SIMSUN.TTC
2018-03-09 16:20:04      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\SYMBOL.TTF
2018-03-09 16:20:05      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\tahoma_1_07.ttf
2018-03-09 16:20:05      Copy :
\USBDisk\AutoInit\Data\DiskC\Fonts\TIMESBD.TTF

```



```

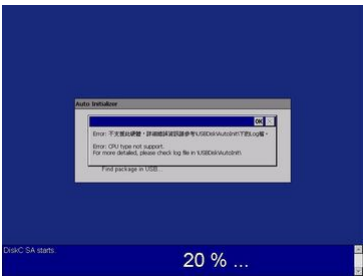
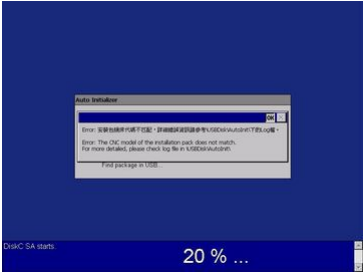
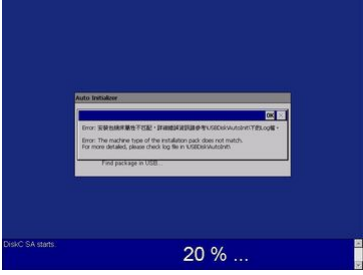
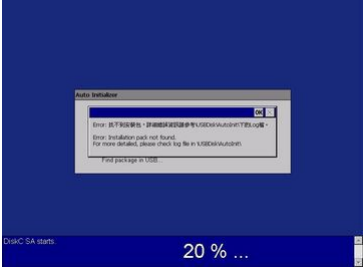
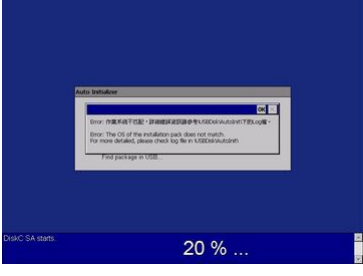
2018-03-09 16:20:06          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TIMESBI.TTF
2018-03-09 16:20:06          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TIMESI.TTF
2018-03-09 16:20:06          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\times_1_30.ttf
2018-03-09 16:20:07          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TREBUC.TTF
2018-03-09 16:20:07          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\VERDANA.TTF
2018-03-09 16:20:09          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\Common\MONA.TTF
2018-03-09 16:20:10          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\Common\MONACO.TTF
2018-03-09 16:20:10          Copy :
\USBdisk\AutoInit\Data\DiskC\OpenCNC\Ladder\CNC.LAD
2018-03-09 16:20:10          Copy :
\USBdisk\AutoInit\Data\DiskC\Shared\DOTNET\OpenInstaller.exe
2018-03-09 16:20:11          Copy :
\USBdisk\AutoInit\Data\DiskC\Shared\DOTNET\SA.EXE
2018-03-09 16:20:11          System Formatting-Finish
2018-03-09 16:20:11          System Reboot
2018-03-09 16:20:11          Wait for auto reboot...
2018-03-09 16:20:51          System Restore-Start
2018-03-09 16:20:52          Install Keyboard Driver
2018-03-09 16:20:52          Install KB Driver...
2018-03-09 16:20:52          Install Software
2018-03-09 16:20:52          Find package in USB...
2018-03-09 16:20:52          Copy package to DiskC...
2018-03-09 16:21:00          Copy :
\USBdisk\AutoInit\package_ce6d6837.zip
2018-03-09 16:21:00          Creating CEINIT.xml...
2018-03-09 16:21:08          System Restore-Finish

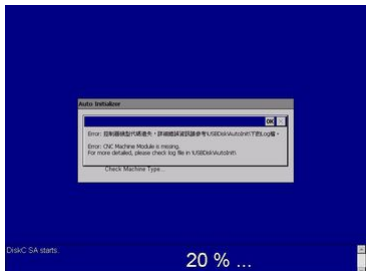
```

6.7 Troubleshooting

- If the following screen appear during installation, please refer to the table below for possible troubleshooting methods

Item	Screen	Method
------	--------	--------

CPU type not support		Please confirm whether the CPU of the controller is the supported type (am35x, am335x, am3354) Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.
The CNC model of the installation pack does not match		Please check whether the installation pack in the USB matches the CNC model Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.
The machine type of the installation pack does not match		Please check whether the installation pack in the USB matches the machine type Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.
Installation pack not found		Please check if the installation package is correctly put in the USB
The OS of the installation pack does not match		Please confirm whether the current operating system is WindowsCE7

CNC Machine Module is missing		Please make sure that the USB has been removed Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.
CNC Machine Type is missing		Please make sure that the USB has been removed Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.

6.8 AutoInitializer Operation Manual_Source

Content
• Introduction • Notes • Execution Environment Requirements • Operation • Step 1. Download • Step 2. Insert the software installation pack • Step 3. Plug the USB into the controller and power on • Initialize file content • Log file • Troubleshooting

6.8.1 Introduction

- This tool can **automatically execute by plugging in the USB**. It can **initialize** the controller and **reset related settings**.
- This tool will format DISKC/DISKA, initialize Windows Registry, and **remove** all customized developing files (PLC/Parameters...).
- **This tool does not have built-in software installation package. The package of the corresponding controller must be installed before use, and the recommended software version is 10.116.247.**

6.8.2 Notes

- Please **do not remove the USB** while the tool is running, this action will cause serious damage to the system.
- If an unexpectedly power failure occurs, user can first try to **plug in the USB to reboot**. The system will **try to continue the initialization operation**. However, if an abnormal things occurs and the tool cannot operate, please send the controller back to Syntec and attach the Log file of the AutoInIt folder in the USB.
- The software installation pack is to provide tools to **automatically determine the version** during execution and to **install automatically**.
- Please make sure that **there is only one installation pack in the AutoInIt folder** before plugging in the USB to avoid system exceptions.
- AutoInitializer is a **disposable tool**, please download and use it again after use; otherwise, it will cause problems such as the failure of the panel shortcut keys.

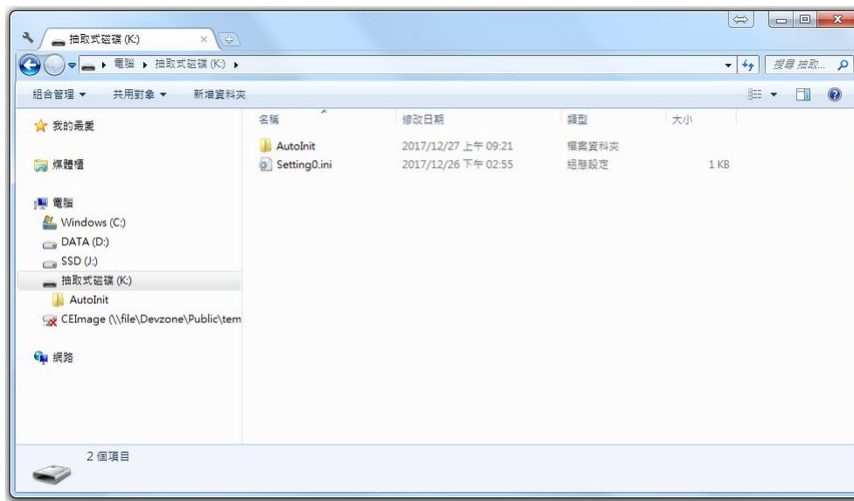
6.8.3 Execution Environment Requirements

- **Software version** (must required):
 - 10.116.0B
- **image version** (suggested):
 - am35x > 7.2.0
 - am3354, no restrictions
 - **If the image version does not match above version, a power failure or other interruption occurs during the operation, the process may not be automatically repaired after power on.**
- **CPU:** Currently only supports AM335x, AM35x
- **OS:** WindowsCE7
- **Controller must be equipped with serial number.**

6.8.4 Operation

Step 1. Download

- ✓ Please download the tool from the official website:
 - Link: <http://www.syntecclub.com/Download.aspx>
 - Path: Download => 06. Other Tool => AutoInitializer
- ✓ Unzip the installation pack to the USB, and the files in your USB are as shown in the figure below:

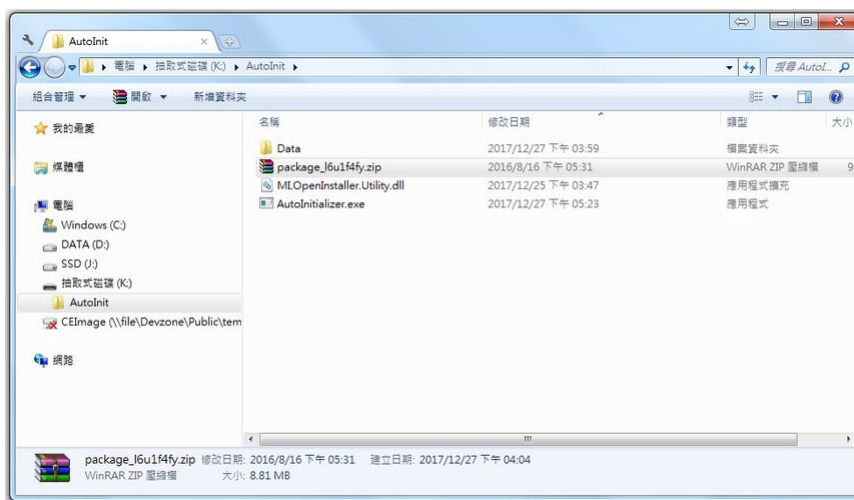


Step 2. Insert the software installation pack

✓ Please go to the official website to download the installation pack of the corresponding model

- Link: <http://www.syntecclub.com/Download.aspx>

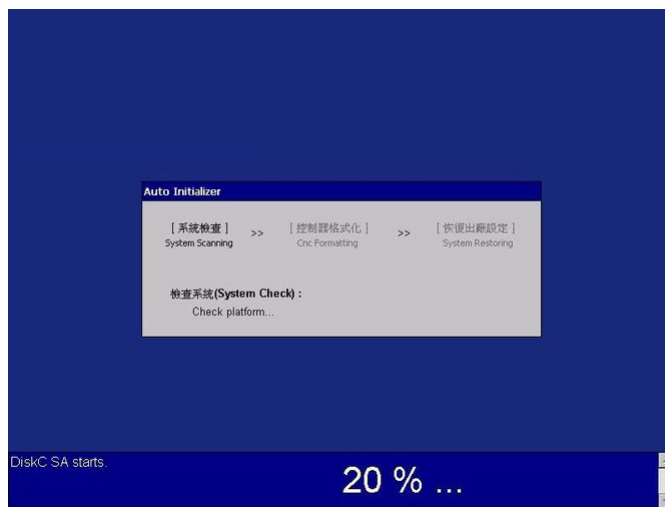
✓ Put the installation pack into the AutoInit folder of USB



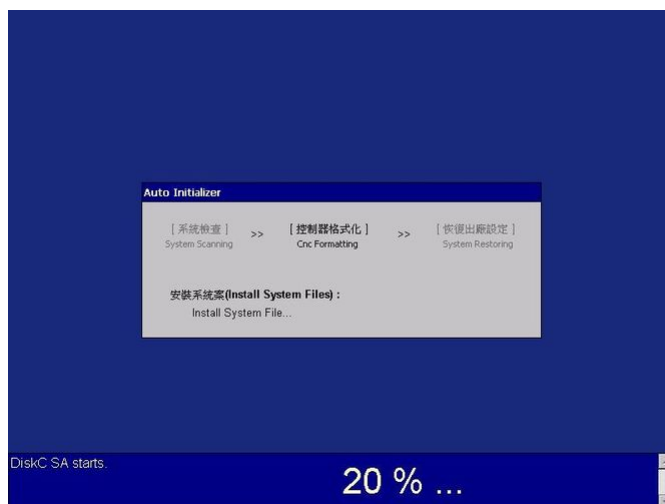
Step 3. Plug the USB into the controller and power on

✓ Please plug the USB into the controller before power off, this tool will execute automatically.

✓ System scanning (automatically)

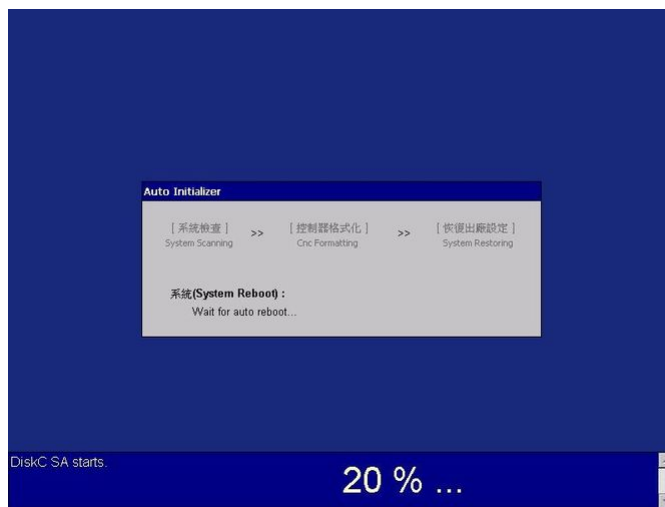


✓ Cnc formatting (automatically)



✓ System reboot (automatically)

SYNIEC



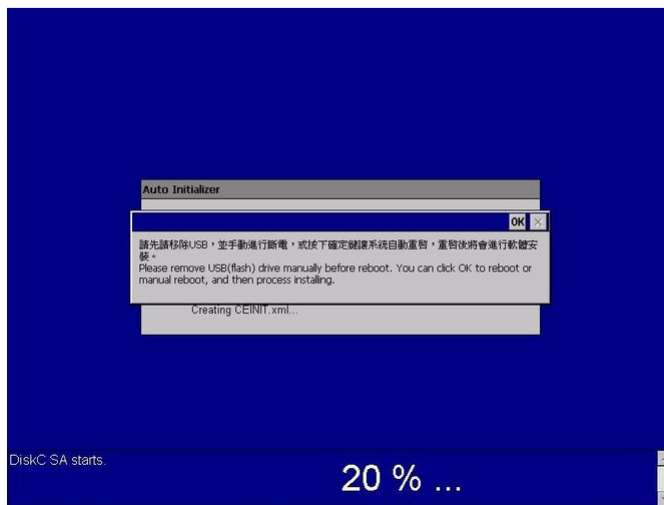
✓ Initialize (automatically)



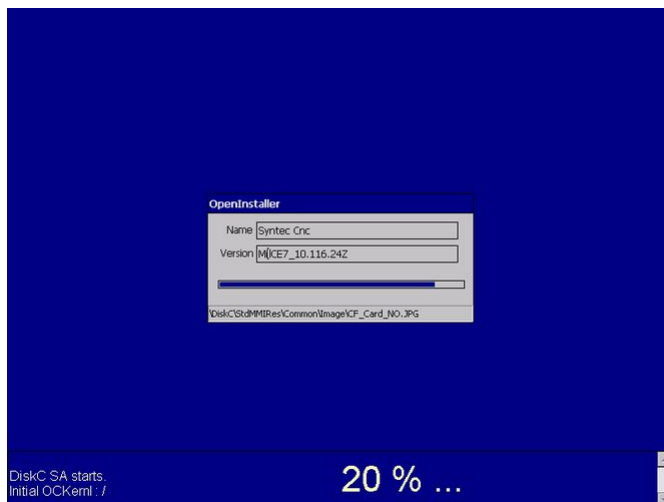
✓ Prompt the user to remove the USB (manually)

When this prompt pops up, please remove the USB first, and manually power off and rest turn on, or press "Enter" or click the OK button on the screen to reboot.

SYNIEC



✓ Install the software (automatically)



✓ After the installation is done, the initialization of the controller is complete.

6.8.5 Initialize file content

- After the controller is initialized, the files in DiskA / DiskC will be removed and put into the files needed for system operation.
The following is the description of some of the inserted files.
 - Ladder
 - Site: AutoInit\Data\DiskC\OpenCNC\Ladder\Cnc.lad
 - Source: Ladder of the company's products before shipment
 - Parameter file

- Site: Autolnit\Data\DiskC\OpenCNC\Data\param.dat
- Source: 21MA product parameter default, and set "axis board no. corresponding to X axis" to 1 (Pr21=1)
- The number of function key is restored to five keys
- If user wants to restore the customized parameter file/ladder after initialization, you can change the file according to the above site.
- Notes:
 - Replace the ladder/parameter file for initialization by yourself, please strictly confirm the correctness of the source file, otherwise it will cause serious problems such as unable to turn on the controller.
(If the above problem occurs after the operation, user can use the initialization tool without any replacement to try to initialize the system again)
 - Valid version: AutoInitializer_1.0.2

6.8.6 Log file

- When this tool is executed, the Log file will be generated in the Autolnit folder in the USB
- Log file name: **serial number_Log.txt**
- Content:
 - Execution time
 - Execution details
 - Record of execution mistakes
 - Record of controller related information

Title	Chinese
OS	作业系统
CPU	处理器
platform	平台
Kernel Version	软体版本
Product Version	产品版本
Machine Type	机床类别
Machine Module	机床属性

Title	Chinese
Serial number	序号
use time	使用期限
cnc option	软体功能选项
Maker ID	机械厂代码
NK Version	映像档版本

- Example:
[Click to expand](#)

```

2018-03-09 16:17:43      System Check
2018-03-09 16:17:43          Check OS is winodws CE...
2018-03-09 16:17:44          Check OS OK.
2018-03-09 16:17:44          Check OS version...
2018-03-09 16:17:44          Check OS version OK.
2018-03-09 16:17:44          Check platform...
2018-03-09 16:17:52          Check platform OK.
2018-03-09 16:17:52          Check cpu...
2018-03-09 16:17:52          Check cpu OK.
2018-03-09 16:17:52          Check serial number exist...
2018-03-09 16:17:52          Check serial number OK.
2018-03-09 16:17:52      System Check-Start
2018-03-09 16:17:52      Access CNC information
2018-03-09 16:17:52          Get OS Version...
2018-03-09 16:17:52          Get OS information...
2018-03-09 16:17:52          Get CPU Type...
2018-03-09 16:17:52          Get platform information...
2018-03-09 16:17:52          Get kernel version...
2018-03-09 16:17:52          Get product version...
2018-03-09 16:17:52          Get machine type...
2018-03-09 16:17:52          Get module type...
2018-03-09 16:17:52          Get serial...
2018-03-09 16:17:52          Get usetime infomation...
2018-03-09 16:17:52          Get cnc option infomation...
2018-03-09 16:17:52          Get Maker ID...
2018-03-09 16:17:52          Get NK version...
2018-03-09 16:17:52      Record CNC information
2018-03-09 16:17:52          Write CNC Information to Log file...
2018-03-09 16:17:52          * OS= WINDOWSCE_7
2018-03-09 16:17:52          * CPU= AM335x

```

```

2018-03-09 16:17:52      * Platform= ARM
2018-03-09 16:17:52      * KrnlVer= 10.116.54E
2018-03-09 16:17:52      * PrdVer= 10.116.54E
2018-03-09 16:17:52      * MachType= Mill
2018-03-09 16:17:52      * MachModule= 220A
2018-03-09 16:17:52      * SerialNo= M9A0001
2018-03-09 16:17:52      * UseTime= No Limit
2018-03-09 16:17:52      * CncOption=
2018-03-09 16:17:52      * MakerID=
2018-03-09 16:17:52      * NKVer= 7.49
2018-03-09 16:17:53      Installation Pack Check
2018-03-09 16:17:53          Find package in USB...
2018-03-09 16:19:07      System Check
2018-03-09 16:19:08          Check OS is winodws CE...
2018-03-09 16:19:08          Check OS OK.
2018-03-09 16:19:08          Check OS version...
2018-03-09 16:19:08          Check OS version OK.
2018-03-09 16:19:08          Check platform...
2018-03-09 16:19:16          Check platform OK.
2018-03-09 16:19:16          Check cpu...
2018-03-09 16:19:16          Check cpu OK.
2018-03-09 16:19:16          Check serial number exist...
2018-03-09 16:19:16          Check serial number OK.
2018-03-09 16:19:16      System Check-Start
2018-03-09 16:19:16      Access CNC information
2018-03-09 16:19:16          Get OS Version...
2018-03-09 16:19:16          Get OS information...
2018-03-09 16:19:16          Get CPU Type...
2018-03-09 16:19:16          Get platform information...
2018-03-09 16:19:16          Get kernel version...
2018-03-09 16:19:16          Get product version...
2018-03-09 16:19:16          Get machine type...
2018-03-09 16:19:16          Get module type...
2018-03-09 16:19:16          Get serial...
2018-03-09 16:19:16          Get usetime infomation...
2018-03-09 16:19:16          Get cnc option infomation...
2018-03-09 16:19:17          Get Maker ID...
2018-03-09 16:19:17          Get NK version...
2018-03-09 16:19:17      Record CNC information
2018-03-09 16:19:17          Write CNC Information to Log file...
2018-03-09 16:19:17          * OS= WINDOWSCE_7
2018-03-09 16:19:17          * CPU= AM335x
2018-03-09 16:19:17          * Platform= ARM
2018-03-09 16:19:17          * KrnlVer= 10.116.54E
2018-03-09 16:19:17          * PrdVer= 10.116.54E
2018-03-09 16:19:17          * MachType= Mill
2018-03-09 16:19:17          * MachModule= 220A
2018-03-09 16:19:17          * SerialNo= M9A0001
2018-03-09 16:19:17          * UseTime= No Limit
2018-03-09 16:19:17          * CncOption=

```

```

2018-03-09 16:19:17      * MakerID=
2018-03-09 16:19:17      * NKVer= 7.49
2018-03-09 16:19:17      Installation Pack Check
2018-03-09 16:19:17      Find package in USB...
2018-03-09 16:19:23      Check Package Platform...
2018-03-09 16:19:31      Check Package Platform OK.
2018-03-09 16:19:31      Check Package Model...
2018-03-09 16:19:31      Check Package Model OK.
2018-03-09 16:19:31      Check Package Machine Type...
2018-03-09 16:19:31      Check Package Machine OK.
2018-03-09 16:19:31      System Check-Finish
2018-03-09 16:19:31      System Formatting-Start
2018-03-09 16:19:31      Disk Formatting
2018-03-09 16:19:31      Format DiskA Part00...
2018-03-09 16:19:31      Find DSK2: Part00 partition...
2018-03-09 16:19:31      Find partition OK.
2018-03-09 16:19:31      Log partition information...
2018-03-09 16:19:31      * DSK2: Part00 volumeName= DiskA
2018-03-09 16:19:31      * DSK2: Part00 PartitionName= Part00
2018-03-09 16:19:31      * DSK2: Part00 FileSys= exfat.dll
2018-03-09 16:19:31      * DSK2: Part00 NumSectors= 130815
2018-03-09 16:19:31      * DSK2: Part00 PartType= 6
2018-03-09 16:19:31      Dismount partition...
2018-03-09 16:19:31      Dismount partition OK.
2018-03-09 16:19:31      Delete partition...
2018-03-09 16:19:32      Delete partition OK.
2018-03-09 16:19:32      Create partition...
2018-03-09 16:19:32      Create partition OK.
2018-03-09 16:19:32      Format DiskC Part01...
2018-03-09 16:19:32      Find DSK1: Part01 partition...
2018-03-09 16:19:32      Find partition OK.
2018-03-09 16:19:32      Log partition information...
2018-03-09 16:19:32      * DSK1: Part01 volumeName= DiskC
2018-03-09 16:19:32      * DSK1: Part01 PartitionName= Part01
2018-03-09 16:19:32      * DSK1: Part01 FileSys= exfat.dll
2018-03-09 16:19:32      * DSK1: Part01 NumSectors= 110720
2018-03-09 16:19:32      * DSK1: Part01 PartType= 6
2018-03-09 16:19:32      Dismount partition...
2018-03-09 16:19:33      Dismount partition OK.
2018-03-09 16:19:33      Delete partition...
2018-03-09 16:19:33      Delete partition OK.
2018-03-09 16:19:33      Create partition...
2018-03-09 16:19:33      Create partition OK.
2018-03-09 16:19:33      Install System Files
2018-03-09 16:19:34      Install System File...
2018-03-09 16:19:42      Copy :
2018-03-09 16:19:42      \USBDisk\AutoInit\Data\DiskC\SB.EXE
2018-03-09 16:19:42      Copy :
2018-03-09 16:19:42      \USBDisk\AutoInit\Data\DiskC\WELOCK.EXE

```

```

2018-03-09 16:19:43          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\ARIALBD.TTF
2018-03-09 16:19:43          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\arial_1_30.ttf
2018-03-09 16:19:44          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\COMIC.TTF
2018-03-09 16:19:44          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\COMICBD.TTF
2018-03-09 16:19:50          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\MINGLIU.TTC
2018-03-09 16:19:53          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\MONA.TTF
2018-03-09 16:19:53          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\MONACO.TTF
2018-03-09 16:20:04          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\SIMSUN.TTC
2018-03-09 16:20:04          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\SYMBOL.TTF
2018-03-09 16:20:05          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\tahoma_1_07.ttf
2018-03-09 16:20:05          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TIMESBD.TTF
2018-03-09 16:20:06          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TIMESBI.TTF
2018-03-09 16:20:06          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TIMESI.TTF
2018-03-09 16:20:06          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\times_1_30.ttf
2018-03-09 16:20:07          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\TREBUC.TTF
2018-03-09 16:20:07          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\VERDANA.TTF
2018-03-09 16:20:09          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\Common\MONA.TTF
2018-03-09 16:20:10          Copy :
\USBdisk\AutoInit\Data\DiskC\Fonts\Common\MONACO.TTF
2018-03-09 16:20:10          Copy :
\USBdisk\AutoInit\Data\DiskC\OpenCNC\Ladder\CNC.LAD
2018-03-09 16:20:10          Copy :
\USBdisk\AutoInit\Data\DiskC\Shared\DOTNET\OpenInstaller.exe
2018-03-09 16:20:11          Copy :
\USBdisk\AutoInit\Data\DiskC\Shared\DOTNET\SA.EXE
2018-03-09 16:20:11          System Formatting-Finish
2018-03-09 16:20:11          System Reboot
2018-03-09 16:20:11          Wait for auto reboot...
2018-03-09 16:20:51          System Restore-Start
2018-03-09 16:20:52          Install Keyboard Driver
2018-03-09 16:20:52          Install KB Driver...
2018-03-09 16:20:52          Install Software
2018-03-09 16:20:52          Find package in USB...

```

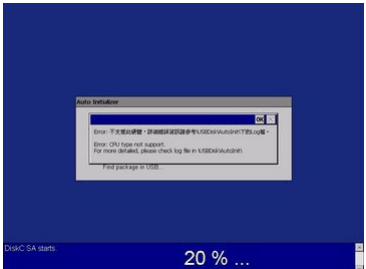
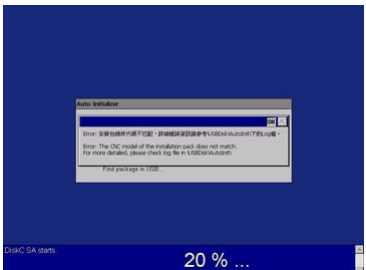
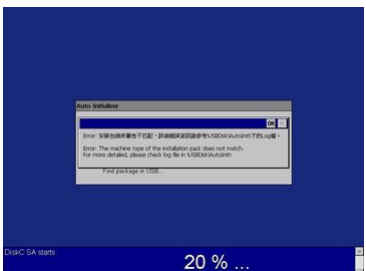
```

2018-03-09 16:20:52      Copy package to DiskC...
2018-03-09 16:21:00      Copy :
\USBDisk\AutoInit\package_ce6d6837.zip
2018-03-09 16:21:00      Creating CEINIT.xml...
2018-03-09 16:21:08      System Restore-Finish

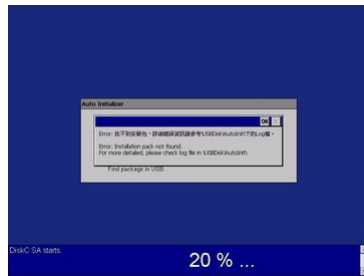
```

6.8.7 Troubleshooting

- If the following screen appear during installation, please refer to the table below for possible troubleshooting methods

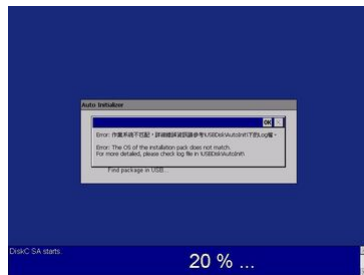
Item	Screen	Method
CPU type not support		Please confirm whether the CPU of the controller is the supported type (am35x, am335x, am3354) Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.
The CNC model of the installation pack does not match		Please check whether the installation pack in the USB matches the CNC model Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.
The machine type of the installation pack does not match		Please check whether the installation pack in the USB matches the machine type Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.

**Installation
pack not
found**



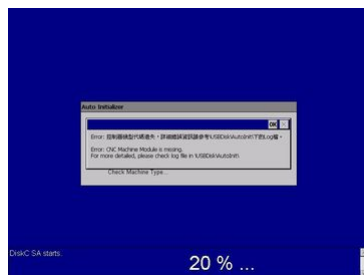
Please check if the installation package is correctly put in the USB

**The OS of
the
installation
pack does
not match**



Please confirm whether the current operating system is WindowsCE7

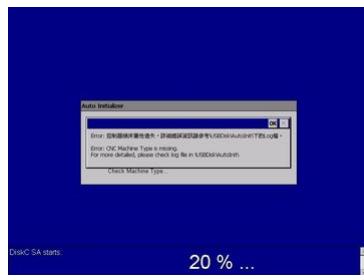
**CNC Machine
Module
is missing**



Please make sure that the USB has been removed

Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.

**CNC Machine
Type is
missing**



Please make sure that the USB has been removed

Note: For more information, please open the AutoInit folder in the USB and refer to the internal Log file.

7 USB Backup Operation Manual

USB Backup 操作手册

7.1 Introduction

- This USB tool automatically backs up the data in the controller when it is powered on, and for situations without a screen, it can be backed up and removed through this tool.

7.2 BackUp Item

The following items currently default to backup

	Item	Other
1	Parameters file	\DiskC\OpenCNC\Data\Param.dat
2	Ladder	\DiskC\OpenCNC\Ladder\cnc.lad
3	SB boot screen	\DiskC\OCRes\Common\Image\SB_logo.bmp
4	System boot screen	Bootcepc.bmp
5	Registry file	\DiskA\OpenCNC\User\Registry.dat
6	Custom folders	\DiskC\OCRes
7	Profile	\DiskA\OpenCNC\NcFiles

7.3 Operation Method

7.3.1 STEP1. Download tools

- Please download from the official website
- <https://www.syntecclub.com/Download.aspx>

Downloads Document 型錄下載 Customer Complaint Customer Service Service Inquiry

Home > Customer Support > Downloads

06.Other Tool USB_Backup 1.Official Version

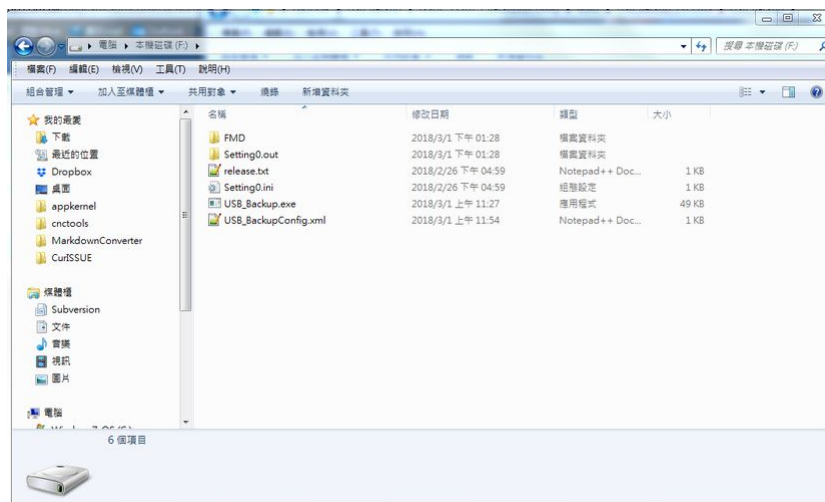
Last 5 versions

VersionNo : 1.1.0

File Name	Description	Download	Release note
USB_Backup_1.1.0.zip	USB_Backup		

7.3.2 STEP2. Insert the software installation package

- Unzip the installation package and put it into the USB
- The data structure in the USB is as follows

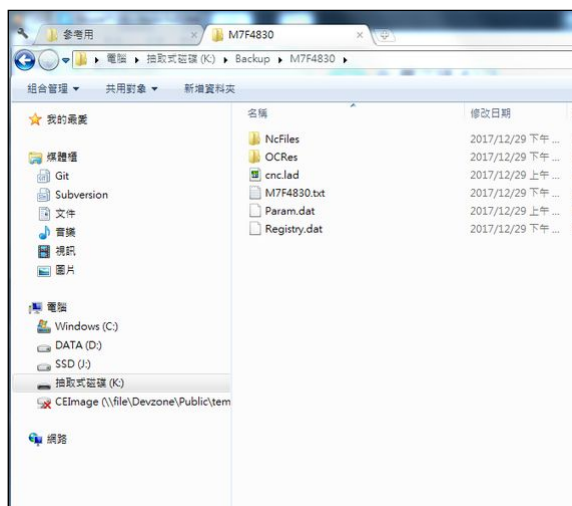


7.3.3 STEP3. Plug the USB into the controller and power it on for backup

- The backup will be done automatically after you plug in the USB and turn on the controller
- When the following screen is displayed, it means the **backup operation is finished**, please **remove the USB** and reboot the controller



- A **Backup** folder will be created in the USB, which will have a folder named according to the serial number, and all the backup files will be placed in this folder



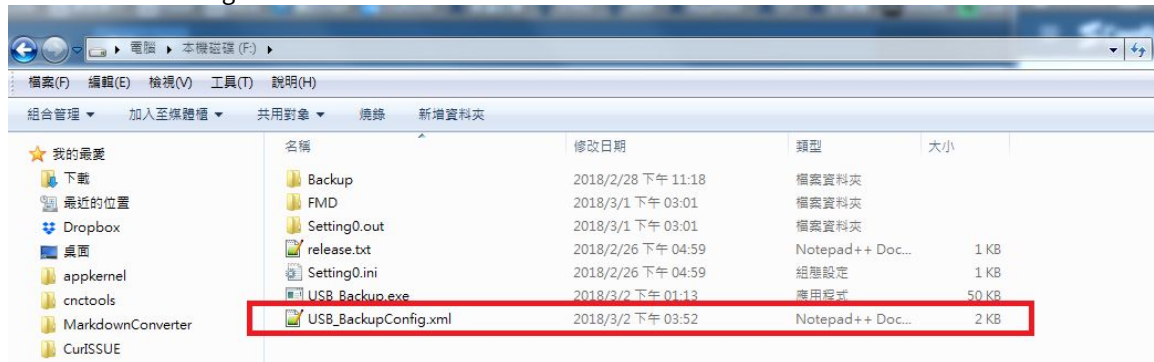
7.4 File Content Description

7.4.1 Backup configuration file(USB_BackupConfig.xml)

Introduction

- File Name: USB_BackupConfig.xml
- File Location: Under the USB root directory, as shown below

- File Format: Configuration file in standard XML format



- Function: USB Backup backup tool, it will backup according to the content in the configuration file USB_BackupConfig.xml

Content

- The default standard configuration files are as follows, as well as the contents of the backup items provided in the upper part of the chapter

USB_BackupConfig

```
<Config>
  <BackupFile>
    <SourcePath>\DiskC\OpenCNC\Data\Param.dat</SourcePath>
    <TargetPath>Param.dat</TargetPath>
  </BackupFile>

  <BackupFile>
    <SourcePath>\DiskC\OpenCNC\Ladder\cnc.lad</SourcePath>
    <TargetPath>cnc.lad</TargetPath>
  </BackupFile>

  <BackupFile>
    <SourcePath>\DiskC\OCRes\Common\Image\SB_logo.bmp</SourcePath>
    <TargetPath>SB_logo.bmp</TargetPath>
  </BackupFile>

  <BackupFile>
    <SourcePath>\DiskC\Bootcepc.bmp</SourcePath>
    <TargetPath>Bootcepc.bmp</TargetPath>
  </BackupFile>

  <BackupFile>
```

```

    <SourcePath>\DiskA\OpenCNC\User\Registry.dat</SourcePath>
    <TargetPath>Registry.dat</TargetPath>
  </BackupFile>

  <BackupFolder>
    <SourcePath>\DiskC\OCRes</SourcePath>
    <TargetPath>OCRes</TargetPath>
  </BackupFolder>

  <BackupFolder>
    <SourcePath>\DiskA\OpenCNC\NcFiles</SourcePath>
    <TargetPath>NcFiles</TargetPath>
  </BackupFolder>
</Config>

```

- The USB Backup tool will perform a software backup of the above text. For additional backups, please refer to the following section
- Notice
 - For arm series backup boot file, <SourcePath> is the same as x86, write \DiskC\Bootcepc.bmp

Related usage specifications

- USB_BackupConfig.xml Backup specifications

Item	Description	Remark
USB_BackupConfig.xml	If the file does not exist, no backup is performed	
	If the file exists, but the content is empty or there is no matching element, then no backup is performed	
	If the file exists and the content has matching elements, the element that matches the specification will be backed up	
Description of the Element for backup		
<SourcePath>	When the <SourcePath> element does not exist, no backup of the item is performed	
	When the <SourcePath> element exists, but the source path file does not exist, no backup of the item is performed	

Item	Description	Remark
<TargetPath>	When the <TargetPath> element does not exist, no backup of the item is performed	
	When <TargetPath> element exists and the specified destination already exists a file, force to overwrite the file for backup	



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Item	Description	Remark
	Element value of <TargetPath>	The backup path to USB is: USB \ Backup \ Controller serial number \ (TargetPath) Either the file name or the folder+file name can be filled in as the TargetPath Backup to file If the element value is <TargetPath> Param. dat </TargetPath> The backup path to USB is: USB \ Backup \ Controller serial number \ (TargetPath)  Backup to folder If the element value is

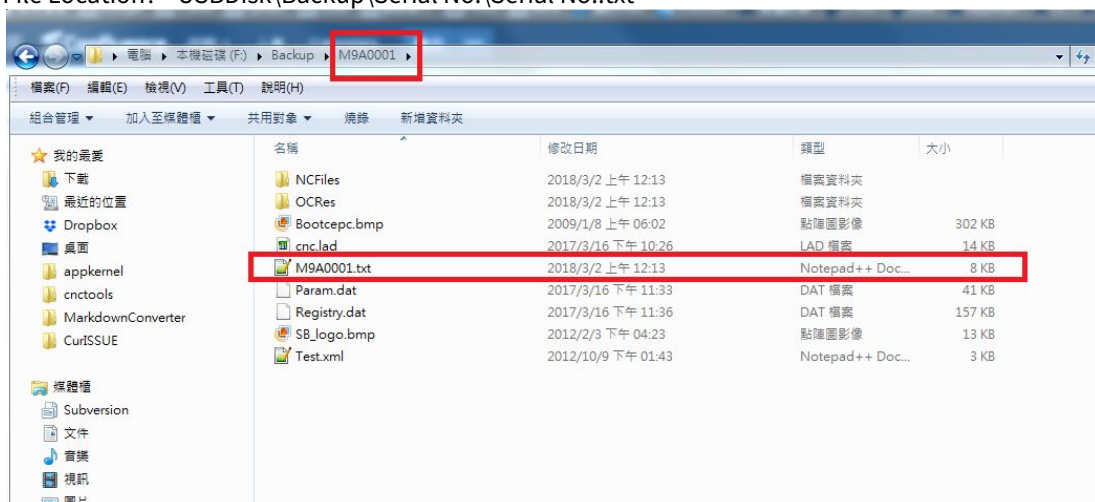
Item	Description	Remark
		<TargetPath> NcFiles </TargetPath> The backup path to USB is: USB \ Backup \ Controller serial number \ (TargetPath) 

7.4.2 Backup Log (Serial No..txt)

Log introduction

This file records **basic information of the controller** and the **backup contents and results** during backup.

- File Name: Serial No..txt
- File Location: USBDisk\Backup\Serial No.\Serial No..txt



Log content

The record of this file is divided into three main sections

1. **Controller basic information**
 - a. USB Backup backup time
 - b. USB Backup version
 - c. Controller serial number
 - d. Controller model
 - e. Controller human-machine version
 - f. Controller core version
 - g. Image file version
2. **Configuration path check**
 - a. If there is an error in the setup file, it will be logged in this section.
 - b. Please refer to the next Q & A section for error troubleshooting.
3. **Backup result**
 - a. In addition to recording the source and destination of the backups, the results of the backups are also recorded, for each project.

```

1 USB_Backup version : 1.0.1103
2 3/3/2018 4:08:51 PM
3 CpuType: AM335x
4 SerialNo : M9A0001
5 MachineModule : 220A
6 MachineType : Mill
7 ProductVersion : 10.118.0
8 KernelVersion : 1011605405
9 ImageVersion : 7.49
10
11
12 ===== Config Path Check =====
13
14 Path error: Source file is not exist
15 File source: \DiskC\OCRes\Common\Image\SB_logo.bmp
16
17 Path error: Source file is not exist
18 File source: \DiskC\OCRes\Common\AppData\5566.xml
19
20
21 ===== Start Backup =====
22
23 Backup File: \DiskC\OpenCNC\Data\Param.dat
24 Target Path: \UsbDisk\Backup\M9A0001\Param.dat
25 Backup Success..
26
27
28 Backup File: \DiskC\OpenCNC\Ladder\cnc.lad
29 Target Path: \UsbDisk\Backup\M9A0001\cnc.lad
30 Backup Success..
31
32
33 Backup File: \DiskC\Bootcepc.bmp
34 Target Path: \UsbDisk\Backup\M9A0001\Bootcepc.bmp
35 Backup Success..
36
37
38 Backup File: \DiskA\OpenCNC\User\Registry.dat
39 Target Path: \UsbDisk\Backup\M9A0001\Registry.dat
  
```

Controller basic information

Configuration path check

Backup result

7.5 Backup Other Custom Files

7.5.1 Backup configuration file edit

- After downloading and unzipping the USB Backup, the configuration file "USB_BackupConfig.xml" can be found.
- Open "USB_BackupConfig.xml" with the text editor software
- To backup "files", add the following XML content to the USB_BackupConfig.xml file, and fill in the source of the files to be backed up in SourcePath and the target location to be backed up to the USB\Backup\Serial No.\ folder in TargetPath

BackupFile

```
<BackupFile>
  <SourcePath>the source of the files to be backed up in the controller</SourcePath>
  <TargetPath>target location to be backed up to the USB</TargetPath>
</BackupFile>
```

- To back up the "folder", add the following XML content to the USB_BackupConfig.xml file, and fill in the source of the folder to be backed up in SourcePath and the target location of the folder to be backed up to USB\Backup\Serial No.\ folder in TargetPath

BackupFolder

```
<BackupFolder>
  <SourcePath>the source of the folder to be backed up in the controller</SourcePath>
  <TargetPath>the target location of the folder to be backed up to USB</TargetPath>
</BackupFolder>
```

- Archive the file after editing, the following usage is as described in the section " Operation Method " above.
- Valid Version: USB Backup v1.1.0

7.5.2 Examples

- Example: To add new backup items as follows

Backup Type	Source Path	Destination path
File	\DiskC\OCRes\Common\AppData\Test.xml	\USB\Backup\Serial No.\Test.xml

Backup Type	Source Path	Destination path
Folder	\DiskC\OCRes\CHT\String	\USB\Backup\Serial No. \OCRes\StringTest

Backup config

```

<BackupFile>
  <SourcePath>\DiskC\OCRes\Common\AppData\Test.xml</SourcePath>
  <TargetPath>Test.xml</TargetPath>
</BackupFile>

<BackupFolder>
  <SourcePath>\DiskC\OCRes\CHT\String</SourcePath>
  <TargetPath>OCRes\StringTest</TargetPath>
</BackupFolder>

```

Paste the above XML content into USB_BackupConfig.xml, as shown below

```

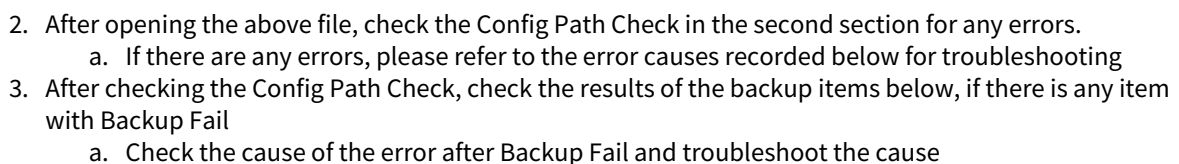
1 <Config>
2   <BackupFile>
3     <SourcePath>\DiskC\OpenCNC\Data\Param.dat</SourcePath>
4     <TargetPath>Param.dat</TargetPath>
5   </BackupFile>
6   <BackupFile>
7     <SourcePath>\DiskC\OpenCNC\Ladder\omc.lad</SourcePath>
8     <TargetPath>omc.lad</TargetPath>
9   </BackupFile>
10  <BackupFile>
11    <SourcePath>\DiskC\OCRes\Common\Image\SB_logo.bmp</SourcePath>
12    <TargetPath>SB_logo.bmp</TargetPath>
13  </BackupFile>
14  <BackupFile>
15    <SourcePath>\DiskC\Bootompe.bmp</SourcePath>
16    <TargetPath>Bootompe.bmp</TargetPath>
17  </BackupFile>
18  <BackupFile>
19    <SourcePath>\DiskA\OpenCNC\User\Registry.dat</SourcePath>
20    <TargetPath>Registry.dat</TargetPath>
21  </BackupFile>
22  <BackupFolder>
23    <SourcePath>\DiskC\OCRes</SourcePath>
24    <TargetPath>OCRes</TargetPath>
25  </BackupFolder>
26  <BackupFolder>
27    <SourcePath>\DiskA\OpenCNC\UoFiles</SourcePath>
28    <TargetPath>UoFiles</TargetPath>
29  </BackupFolder>
30  <BackupFile>
31    <SourcePath>\DiskC\OCRes\Common\AppData\Test.xml</SourcePath>
32    <TargetPath>Test.xml</TargetPath>
33  </BackupFile>
34  <BackupFolder>
35    <SourcePath>\DiskC\OCRes\CHT\String</SourcePath>
36    <TargetPath>OCRes\StringTest</TargetPath>
37  </BackupFolder>
38 </Config>

```

- After archiving, the backup will be completed as described in the previous section, as shown below

7.6 Q&A

1. Check the log in USB, the file name is controller serial number, the path is USB\Backup\Serial No. \Serial No..txt
Take the following picture as an example



7.6.2 Common errors and troubleshooting methods

Common errors are usually backup configuration file errors

Error message	Description	Troubleshooting method
\USBDisk\USB_BackupConfig.xml does not exist! USB Backup terminates.	USB_BackupConfig.xml does not exist	- Place USB_BackupConfig.xml into the USB - Re-download the latest version of the USB Backup utility from the official website
USB_BackupConfig.xml is a format error	USB_BackupConfig.xml does not conform to XML format	Check the USB_BackupConfig.xml, and fix the wrong format
Not exist <config> element, please check USB_BackupConfig.xml	<config> does not exist in the USB_BackupConfig.xml	Check USB_BackupConfig.xml, and check <config> for errors
Unknown element: xxxx	The tag that does not meet the specification appears in the USB_BackupConfig.xml	Remove the tag that does not conform to the specification
Path error: Source Path is empty	Source Path is empty	Fill in the source of the backup item
Path error: Target Path is empty	Target Path is empty	Fill in the destination of the backup item
Path error: Source file is not exist	Source file is not exist	Check if the file path of the backup project is incorrect
Path error: Source folder is not exist	Source folder is not exist	Check if the folder path of the backup project is incorrect
No item need backup	No item need backup	- Check if the backup profile is empty - Check if the backup profile is in the wrong format

Error message	Description	Troubleshooting method
Backup Fail: Copy file error, xxxx	Copy file error	• Check if the configuration file format is wrong • Power off and restart to confirm if the problem still exists
Backup Fail: Create Folder error, xxxx	Create Folder error	• Check if the configuration file format is wrong • Power off and restart to confirm if the problem still exists



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8 Setting0.ini Application Manual.

8.1 Intorduction

Provide USB Disk auto setup/backup/setting functions when the controller has no external screen or the electronic control personnel cannot operate.

8.2 Mechanism Description

Place a file in the USBDISK root directory and name it "Setting0.ini". When booting, the controller will first read this setting file and perform corresponding things according to different commands. After processing, it will output a file " Setting0.out" in the root directory of USBDISK

8.3 Instruction

The format of "Setting0.ini" is as follows:

```
ACTION=aaa
PARAMETER=ppp
EXT=eee
OPTION=yyy
```

ACTION (aaa) currently provides commands as follows:

Com man d (ACTI ON)	Description	Example	Remarks
EXE	Execute the program of Parameter(ppp).	If user wants to run a program named CncMonCE.EXE, ACTION=EXE PARAMETER=CncMonCE.EXE	*PARAMET ER uses full qualified path
GET_I NFO	Obtain the controller information in the output file, the content includes serial number/model/product/ version number/network IP information	ACTION=GET_INFO	

Com mand (ACTI ON)	Description	Example	Remarks
SET_I P	While setting network IP information, the content must be entered in Parameter(ppp), Its content is DHCPEnable, IP, SubnetMask, DNS, DefaultGateway, WINS, separated by commas, and contains no blanks (DHCPEnable is either 0 or 1, 1 means Enable, and the other setting formats follow IP standard format, and the specifications are similar to the network setting page of the controller) When EXT(eee) is set to LAN2, the setting of the second network port can refer to the above information. (After 10.116.36T, 10.116.48, 10.117.48)	ACTION=SET_IP PARAMETER=0,192.168.1.10,255.255.255.0,0.0.0.0,0.0.0.0,0.0.0.0 EXT=LAN1 Indicate the first network port. Specify IP to be 192.168.1.10 directly. The subnet mask is 255.255.255.0. The preset gateway of primary DNS and primary WINS are both 0.0.0.0.	it will reboot system after setting ip.
SB_B ACKU P	Perform backup operation, the file is stored in the USB root directory and the file name is "serial number_date.zip"	ACTION=SB_BACKUP	
SB_R ESTO RE	Restore the file named Parameter(ppp) in the USB root directory	ACTION=SB_RESTORE PARAMETER=M2G4314_20170124.zip (M2G4314_20170124.zip is the file to be restored and must be placed in the USB root directory)	
SW_I NSTA LL	Install the file named Parameter(ppp) in the USB root directory	ACTION=SW_INSTALL PARAMETER=package_dca6f689.zip (package_dca6f689.zip is the file to be installed and must be placed in the USB root directory)	

Com mand (ACTI ON)	Description	Example	Remarks
IMG_I NSTA LL	Image file update. Update the file named Parameter(ppp) in the USB root directory	ACTION=IMG_INSTALL PARAMETER=WCE7_AM335x_7.48.0.bin (WCE7_AM335x_7.48.0.bin is the image file to be installed and must be placed in the USB root directory)	
AUTO _SA	SA screen will pop up automatically	ACTION=AUTO_SA	10.116.36R, 10.116.47, 10.117.47 add new commands

<Notes>

1. "OPTION=yyy" is the newly added extended instruction format of 10.116.16G, 10.116.24, and 10.117.24.
2. If OPTION=REPEAT is set in Setting0.ini, Setting0.out will still be generated after the corresponding command is executed, but the corresponding ACTION will still be executed next time when it is rebooted. The regenerated log will still be written in Setting0.out, continuing with the last time log.
3. If OPTION=REPEAT is not set in Setting0.ini, the original specifications will be maintained, which means the "Setting0.out" file will exist, and the "Setting0.ini" command will not be executed when booting.

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9 RemoteAPI Operation Manual.

[System Introduction](#) [Application Instruction](#) [Function Introduction](#)

9.1 System Outline

9.1.1 Solution Framework

Syntec Dipole function separates the human machine interface from the core (Figure 1 & Figure 2), allowing users to control the back end controller via the Internet through front end applications (such as standard human machine interface). Users can use this framework for remote monitoring and diagnosis. The development environment of front end applications is no longer limited to Windows CE, and general applications of Windows XP, Windows 7,... can be developed, creating unlimited possibilities.

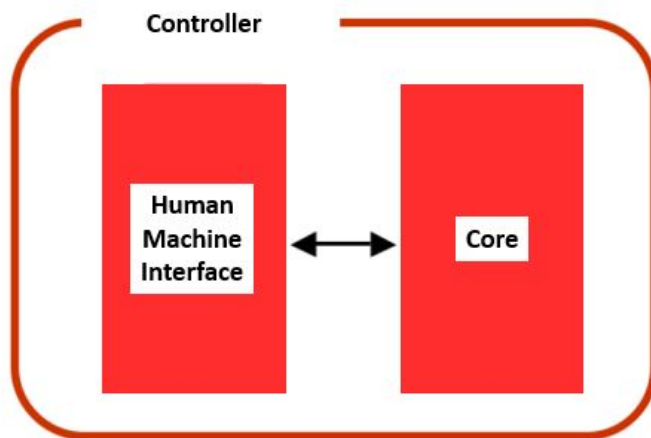
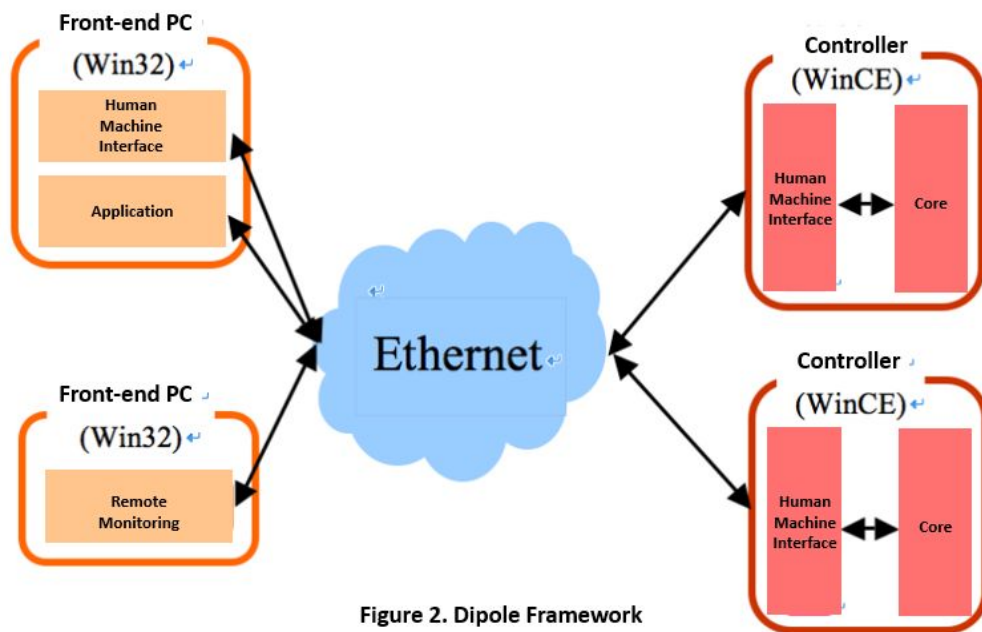


Figure 1. Original Framework of Controller

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This user manual teaches users how to install CNC simulation software to the front end Windows user terminal, and start to use the functions of RemoteCNC one-to-many API.

9.1.2 How to set the controller to turn on Dipole through the human machine interface

Servo setting is on the human machine interface FenuBar: (The interface will be slightly different from different controller.)

1. F6 Parameter settings → F10 Next page → F7 Core Server(Figure 3)。
2. F5 Maintain → F2 Internet settings → F5 Core server

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Figure 3 (a)

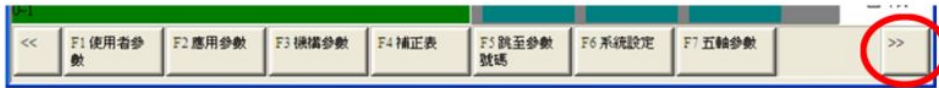


Figure 3 (b)



Figure 3 (c)

The Dipole configuration file of the back end is located in \DiskC\WinCE\Shared\DipoleSettings.xml. In addition to editing the configuration file with a text editor (please refer to "Appendix 1 Back-end Dipole Configuration File"), you can also directly use the human machine interface to modify the settings of Dipole.



This FenuBar function will open the "Core Server Setting Page" (Figure 4).

The following is the description of each parameter:

- "Whether to turn on the server when booting up" is whether to automatically activate the core Dipole function when booting up.
- "Timeout" means that when the network has no response after this time, the network connection will be disconnected.

After the user completes the core Dipole settings, pressing "F3 Confirm" to save the settings, or press "F4 Cancel" to recover the settings. After setting, the Dipole function will be automatically activated when next time booting up.

9.2 Project Settings

- Please refer to the attached example "SyntecRemoteExample", and attach "Syntec.RemoteCNC.dll" to the project reference.

9.2.1 Precautions

1. Please confirm the controller version first, and check the table below to find the corresponding RemoteAPI version.
2. If you use the v1 version of RemoteAPI, please install the 32 simulation software MacroDev first, and its version must same as the controller.
3. Syntec.OpenCNC.dll, Syntec.RemoteCNC.dll, Syntec.RemoteObj.dll, OCAPI.dll, OCUSER.dll... and other dlls need to be placed in the same folder as the main program.

9.2.2 Common Problem Solutions

1. The computer firewall needs to turn on port 5568, port 5570 for the controller to connect to the computer. "In Windows environment, you can go to Firewall> Advanced Settings> Input Rules> Add Rule> Port> TCP> Input 5568,5570> Allow all the connections"
2. Note that the computer has two network interface cards, and adjust the priority of the card connected to the controller to a higher level, so the connection can be made. "In the Windows environment, you can go to Internet and Sharing Center> Enter to setting of changing the interface card> Press F10 to show the toolbar> Advanced> Advanced settings> Adjust the priority of network interface card to a higher level"
3. If you find that the network is unstable and an error message displayed while using v4 version, please try to connect again after ten seconds.
4. If you found that Syntec.RemoteCNC.dll and Syntec.RemoteObj.dll are missing while using 1.0.12_v1 version, please go to the official website to download the 1.0.12_v1 again.

Note: If the above Windows operation appear error, please search for related settings by yourself.

9.2.3 RemoteAPI Version Comparison Table

Controller Version	RemoteAPI Version	Note
After 10.116.54.x	1.2.2	
After 10.116.54.x	1.2.1	Remove usage restrictions from the newer version of the controller
10.116.54.x ~ 10.118.60.x	1.2.0	reference Syntec.OpenCNC.dll is needed
10.116.54.x ~ 10.118.30.x	1.1.0	
10.116.36.x	1.0.12_v4	
10.116.24.x	1.0.12_v3	
10.116.10.x ~ 10.116.16.x	1.0.12_v2	
10.116.0.x	1.0.12_v1	Require the corresponding MacroDev installation

[System Introduction](#)[Application Instruction](#)[Function Introduction](#)

9.3 Basic Data Type & Report Error

Data Type

Type Name	Size
byte	8 bits
short	16 bits

int	32 bits
float	32 bits
string	unlimited

Error Report Descriptions

Report Value (short)	Error Type	Descriptions
-18	Not supported	Controller doesn't support this function.
-17	Protocol error (Ethernet version only)	Data from Ethernet Board is incorrect.Contact with the service section or the section in charge.
-16	Socket error (Ethernet version only)	Investigate CNC power supply, Ethernet cable and I/F board.
-15	DLL file error	There is no DLL file for each CNC series corresponding to specified node.
-14	USBEmpty	USB is empty
-13	NoUSB	No USB is pulgin
-8	Handle number error	Get the library handle number.
-7	Version mismatch between the CNC/PMC and library	The CNC/PMC version does not match that of the library.Replace the library or the CNC/PMC control software.
-6	Abnormal library state	An unanticipated error occurred.Contact with the section in charge.
-2	Reset or stop request	The RESET or STOP button was pressed.Call the termination function.

Report Value (short)	Error Type	Descriptions
-1	CNC Busy	Wait until the completion of CNC processing, or retry.
0	Normal termination	Execution completed without any error!
1	Error(function is not executed, or not available)	Specific function which must be executed beforehand has not been executed.Otherwise that function is not available.
2	Error(data block length error, error of number of data)	Check and correct the data block length or number of data.
3	Error(data number error)	Check and correct the data number.
4	Error(data attribute error)	Check and correct the data attribute.
5	Error(data error)	Check and correct the data.
6	Error(no option)	There is no corresponding CNC option.
7	Error(write protection)	Write operation is prohibited.
8	Error(memory overflow)	CNC tape memory is overflowed.
9	Error(CNC parameter error)	CNC parameter is set incorrectly.
10	Error(buffer empty/full)	The buffer is empty or full.
11	Error(path number error)	A path number is incorrect.
12	Error(CNC mode error)	The CNC mode is incorrect.Correct the CNC mode.
13	Error(CNC execution rejection)	The execution at the CNC is rejected.Check the condition of execution.

Report Value (short)	Error Type	Descriptions
14	Error(Data server error)	Some errors occur at the data server.
15	Error(alarm)	The function cannot be executed due to an alarm in CNC.Remove the cause of alarm.
16	Error(stop)	CNC status is stop or emergency.
17	Error(State of data protection)	Data is protected by the CNC data protection function.
18	Error(Not found Machine ID)	Please Check or not send CNC_CONNECTION command.
19	Error(No out)	Please Check NO.
20	Error(Need to Update RemoteCnc Version)	RemoteAPI version is too old for connected controller, need to update RemoteAPI version.

9.4 Basic Function

isUSBExist : Whether there is an USB plugged in

Function Name	bool isUSBExist()			
Argument	variable name	type	[in/out]	descriptions
	N/A			
Return Value	True => there is an USB plugged in, False => there isn't an USB plugged in			

SeriesNo: Controller Series No.

Function Name	string SeriesNo(...)			
Argument	variable name	type	[in/out]	descriptions
	N/A			
Return Value	controller series number or null string			

CncOption: Controller Software Option

Function Name	string CncOption(...)			
Argument	variable name	type	[in/out]	descriptions
	N/A			
Return Value	software options of controller (apart by spaces)			

MainBoardPlatformName: Mainboard Model of Controller

Function Name	string MainBoardPlatformName (...)			
Argument	variable name	type	[in/out]	descriptions
	N/A			
Return Value	controller mainboard model or null string			

READ_information: Basic Information

Function Name	short READ_information(...)			
Argument	variable name	type	[in/out]	descriptions
	Axes	short	out	number of axes
	CncType	string	out	ex:'18' : Series 180/180i
	MaxAxes	short	out	maximum number of axes
	Series	string	out	M/T type
	Nc_Ver	string	out	NC version
	AxisName	string[]	out	coordinate name of each axis
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_status: Status Information

Function Name	short READ_status(...)
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SYNTEC

Argument	variable name	type	[in/out]	descriptions
	MainProg	string	out	main program name
	CurProg	string	out	current program name
	CurSeq	x	out	does not support, default = -1
	Mode	string	out	ex:"MDI", "MEM"...
	Status	string	out	ex:"STOP", "START"...
	Alarm	string	out	ex:"ALARM", "*****"
	EMG	string	out	ex:"EMG", "*****"
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Note	Alarm: When an alarm occurs, "ALARM" is returned; when no alarm occurs, "*****" is returned. EMG: When emergency stop happens, "EMG" is returned; when no emergency stop happens, "*****" is returned			

READ_position: Coordinate Information

Function Name	short READ_position(...)
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SYNTEC

Argument	variable name	type	[in/out]	descriptions
	AxisName	string[]	out	coordinate name of each axis
	DecPoint	short	out	decimal places
	Unit	string[]	out	unit
	Mach	float[]	out	machine coordinate
	Abs	float[]	out	absolute coordinate
	Rel	float[]	out	relative coordinate
	Dist	float[]	out	remaining distance
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_relpos: Set the position value of relative coordinate

Function Name	short WRITE_relpos(...)			
Argument	variable name	type	[in/out]	descriptions
	AxisName	string	in	axis coordinate name
	PosValue	double	in	position value of relative coordinate
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_gcode: G Code

Function Name	short READ_gcode(...)
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Argument	variable name	type	[in/out]	descriptions
	Gdata	string[]	out	G Code
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_othercode: Else Codes(H Code,D Code,T Code,M Code,B Code,F Code,S Code)

Function Name	short READ_othercode(...)			
Argument	variable name	type	[in/out]	descriptions
	HCode	int	out	H Code
	DCode	int	out	D Code
	TCode	int	out	T Code
	MCode	int	out	M Code
	FCode	int	out	F Code
	SCode	int	out	S Code
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_spindle: Feedrate/Spindle Speed

Function Name	short READ_spindle(...)
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Argument	variable name	type	[in/out]	descriptions
	OvFeed	float	out	Feed Rate Over Ride
	OvSpindle	float	out	Spindle Over Ride
	ActFeed	float	out	Actual Feedrate
	ActSpindle	int	out	Actual Spindle Speed
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_time: Time

Function Name	short READ_time(...)			
Argument	variable name	type	[in/out]	descriptions
	PowerOnTime	int	out	boot time(sec)
	AccumulateCuttingTime	int	out	cutting time(sec)
	CuttingTimePerCycle	int	out	cycle time(sec)
	WorkTime	int	out	machining time(sec)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_part_count: Number of Workpieces

Function Name	short READ_part_count(...)
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Argument	variable name	type	[in/out]	descriptions
	part_count	int	out	number of workpiece
	require_part_count	Int	Out	required number of workpiece
	Total_part_count	int	out	total number of workpiece
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DOWNLOAD_work_record: Download remote machining record file

Function Name	short DOWNLOAD_work_record (...)			
Argument	variable name	type	[in/out]	descriptions
	Destination	string	in	download path
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

IsDipoleSupported: Whether it is possible to connect via dipole within the given timeout time

Function Name	bool IsDipoleSupported (...)			
Argument	variable name	type	[in/out]	descriptions
	IPAddr	string	in	destination IP address
	Timeout	uint	in	given timeout time (ms)

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
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READ_MakerConfigInfo: Machinery Information

Function Name	short READ_MakerConfigInfo(...)			
Argument	variable name	type	[in/out]	descriptions
	szModel	string	out	machine model
	szMachSN	string	out	machine series no.
	szDate	string	out	machine manufacturing date
	szDevSN	string	out	device series number
	szPhone	string	out	machinery phone number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_MakerConfigInfo: Set the information of machinery

Function Name	short WRITE_MakerConfigInfo(...)			
Argument	variable name	type	[in/out]	descriptions
	szModel	string	in	machine model
	szMachSN	string	in	machine series no.
	szDate	string	in	machine manufacturing date
	szDevSN	string	in	device series number
	szPhone	string	in	machinery phone number

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
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9.5 Alarm Related Funtion

READ_alm_current: Current Alarm

Function Name	short READ_alm_current(...)			
Argument	variable name	type	[in/out]	descriptions
	IsAlarm	bool	out	whether there is any alarm be triggered
	AlmMsg	String[]	out	get the information of current alarm
	AlmTime	DateTime[]	out	get the triggered time of current alarm
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
note	The arrangement rule of the alarm array is from new to old. The format of alarm message is("motion" "number" "descriptions")			

READ_alm_history: Alarm History

Function Name	short READ_alm_history(...)			
Argument	variable name	type	[in/out]	descriptions
	AlmMsg	string[]	out	alarm message
	AlmTime	DateTime[]	out	alarm time
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

note	The arrangement rule of the alarm array is from new to old. The format of alarm message is("motion" "number" "descriptions")			
Function Name	short READ_alm_history(...)			
Argument	variable name	type	[in/out]	descriptions
	AlmMsg	string[]	out	alarm message
	AlmTime	DateTime[]	out	alarm time
	Duration	uint[]	out	duration, in sec
	Clear	bool[]	out	whether the alarm(s) is cleared
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	• Only support 10.116.54Q, 10.118.0K, 10.118.11 or after • The arrangement rule of the alarm array is from new to old. The format of alarm message is("motion" "number" "descriptions")			

9.6 Tool Offset Function

READ_offset_title: Read the titles of tool offset

Function Name	short READ_offset_title(...)			
Argument	variable name	type	[in/out]	descriptions
	OffsetTitle	string[]	out	titles
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

Notes	series	return value descriptions	model
	Syntec M series	{"RADIUS GEOM","RADIUS WEAR","LENGTH GEOM","LENGTH WEAR"}	Mill, Drill, Wood, GlassGrind
	Syntec T series	{"WEAR X","WEAR Z","WEAR A","LENGTH X","LENGTH Y","LENGTH A","TOOL NOSE RADIUS","TOOL NOSE R WEAR","TOOL NOSE"}	Lathe

READ_offset_all: Read the offset of all tools

Function Name	short READ_offset_all(...)			
Argument	variable name	type	[in/out]	descriptions
	OffsetData	double[][]	out	offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	The second array of Offset Data, with the title name (Length Geom...). Get the data start from the first tool.			

READ_offset_scope: Read the tool offset from the given range.

Function Name	short READ_offset_scope(...)			
Argument	variable name	type	[in/out]	descriptions
	StartNumber	short	in	start no. (start from 1)
	EndNumber	short	in	stop no.
	OffsetData	double[][]	out	offset data

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
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READ_offset_single: Read the single tool offset

Function Name	short READ_offset_single(...)			
Argument	variable name	type	[in/out]	descriptions
	ofNumber	short	in	set the offset number
	OffsetData	double[]	out	offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_offset_all: Write offset of all tools

Function Name	short WRITE_offset_all(...)			
Argument	variable name	type	[in/out]	descriptions
	OffsetData	double[][]	in	set the offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	Start from the first tool, until finish writing all the offset.			

WRITE_offset_single: Write offset of single tool

Function Name	short WRITE_offset_single(...)
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Argument	variable name	type	[in/out]	descriptions
	ofNumber	short	in	set the offset number
	OffsetData	double[]	in	set the offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_offset_count: Read the number of offset data

Function Name	short READ_offset_count(...)			
Argument	variable name	type	[in/out]	descriptions
	Count	short	out	number of offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.7 Workpiece Coordinate Function

READ_work_coord_axis: Read the title of workpiece coordinate

Function Name	short READ_work_coord_title(...)			
Argument	variable name	type	[in/out]	descriptions
	WorkCoordTitle	string[]	out	title name
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_work_coord_all: Read all the workpiece coordinate

Function Name	short READ_work_coord_all(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string[]	out	item ,ex:EXT,G54,G55...
	WorkCoord	float[][]	out	workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	CoordName like: EXT,MPGShift, G54, G55, G56, G57, G58, G59 , G54P7, G54P8, G54P100等			

READ_work_coord_scope: Read the workpiece coordinate in the given range

Function Name	short READ_work_coord_scope(...)			
Argument	variable name	type	[in/out]	descriptions
	StartNumber	short	in	start no.
	EndNumber	short	in	stop no.
	CoordName	string[]	out	item, ex:EXT,G54,G55...
	WorkCoord	float[][]	out	workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

Notes	CoordName like: EXT,MPGShift, G54, G55, G56, G57, G58, G59 , G54P7, G54P8, G54P100等 The number corresponds to the workpiece coordinate name as follows	
	workpiece name	corresponding no.
	EXT	0
	MPG Shift	1
	G54	2
	G55	3
	G56	4
	G57	5
	G58	6
	G59	7
	G54 P7~P100	8~101

READ_work_coord_single: Read the single workpiece coordinate

Function Name	short READ_work_coord_single(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string	in	item, ex:EXT,G54,G55...
	WorkCoord	float[]	out	workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_work_coord_all: Write all the workpiece coordinate

Function Name	short WRITE_work_coord_all(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string[]	in	setting item, ex:EXT,G54,G55...
	WorkCoord	float[][]	in	set the workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_work_coord_single: Write single workpiece coordinate

Function Name	short WRITE_work_coord_single(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string	in	setting item, ex:EXT,G54,G55...
	WorkCoord	float[]	in	set the workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_work_coord_count: Read the number of workpiece coordinate

Function Name	short READ_work_coord_count(...)			
Argument	variable name	type	[in/out]	descriptions
	Count	short	out	number of workpiece coordinate data

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
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9.8 Macro Variable Function(Global Variable)

READ_macro_all: Read all Macro variable (global variable)

Function Name	short READ_macro_all(...)			
Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int[]	out	Macro no.
	MacroData	double[]	out	Macro variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_macro_scope: Read Macro variable (global variable) in the given range

Function Name	short READ_macro_scope(...)			
Argument	variable name	type	[in/out]	descriptions
	StartNumber	int	in	start number (start from 1)
	EndNumber	int	in	stop number
	MacroNumber	int[]	out	Macro number
	MacroData	double[]	out	Macro variable data

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
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WRITE_macro_all: Write all the Macro variable (global variable)

Function Name	short WRITE_macro_all(...)			
Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int[]	in	set Macro number
	MacroData	double[]	in	set Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_macro_single: Read single Macro variable(global variable)

Function Name	short READ_macro_single(...)			
Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int	in	Macro number
	MacroData	double	out	Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_macro_single: Write single Macro variable(global variable)

Function Name	short WRITE_macro_single(...)
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Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int	in	set Macro number
	MacroData	double	in	set Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_macro_variable: Read the start and end number of Macro variable(global variable)

Function Name	short READ_macro_variable(...)			
Argument	variable name	type	[in/out]	descriptions
	Variable	int[][]	out	the start and end number of Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	Declare array: Variable[type][0]:Start Number Variable[type][1]:End Number 如: Variable[0][0]:100 Variable[0][1]:199 Variable[1][0]:500 Variable[1][1]:599			

9.9 NC Program Function

WRITE_nc_main: Assign the specific NC program

Function Name	short WRITE_nc_main(...)
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Argument type 1	variable name	type	[in/out]	descriptions
	szProgName	string	in	program name
Argument type 2	variable name	type	[in/out]	descriptions
	szProgName	int	in	program name
	nCoordID	int	in	Path number
	nLineNumber	int	in	start line number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	• back-end controller support version: 10.116.10x or after • back-end controller version: 10.116.10x-10.116.16x After assign the NC program, the controller mode couldn't be changed. • API of Argument type 2 is only provided by Syntec.RemoteCNC.Win32.dll after version 10.116.54A • When using Argument type 2, refer to: 多轴群规划与MST多通道应用手册			

READ_nc_mem_list: Read the internal NC program list of machine

Function Name	short READ_nc_mem_list(...)			
Argument	variable name	type	[in/out]	descriptions
	NcList	string[][]	out	NC program list
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

Notes	Since the NC lists of machineries are different, the following format is recommended: NcList[][0]:NC Name NcList[][1]:Size (byte) NcList[][2]:Last Write DateTime NcList[][3]: file / directory Note: If there is no NC program list, return -1(CNCBUSY), please pay attention to this.
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UPLOAD_nc_mem: Upload NC program to controller

Function Name	short UPLOAD_nc_mem(...)			
Argument	variable name	type	[in/out]	descriptions
	Source	string	in	the full path name of machine
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DOWNLOAD_nc_mem: Download NC program

Function Name	short UPLOAD_nc_mem(...)			
Argument	variable name	type	[in/out]	descriptions
	Source	string	in	NC program name
	Destination	string	in	folder path
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DEL_nc_mem: Delete the NC program in the controller

Function Name	short DEL_nc_mem(...)			
Argument	variable name	type	[in/out]	descriptions
	Name	string	in	name
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_nc_freespace: Remaining Space(k)

Function Name	short READ_nc_freespace(...)			
Argument	variable name	type	[in/out]	descriptions
	FreeSpace	Long	out	remaining space(k)
Return Value	0: Operation completed, else please refer to attachment 1. return error descriptions			

READ_nc_OPLog: Read the operation log

Function Name	short READ_nc_OPLog(...)			
Argument	variable name	type	[in/out]	descriptions
	OPLog	string[]	out	operation record
	count	int	in/out	number of record
Return Value	0: Operation completed, else please refer to attachment 1. return error descriptions			

Notes

1. 'Count' input the number of the log to be read, and returns the number of log be read.
2. When the input parameter count is 0, all operation log will be returned.
3. When a timeout error occurs, you can use the SynetcRemoteCNC(ip,timeout) constructor to increase the timeout. Timeout=0 means none, and the unit of timeout is ms.
4. The OPLog returned can refer to the appendix for relevant information

Note: If there is no Log, return the original array and write "No Log".

⚠ This is NOT supported for V12.

9.10 System Parameter Function

READ_param_max: Read the maximum parameter number of machine

Function Name	short READ_param_max(...)			
Argument	variable name	type	[in/out]	descriptions
	MaxNumber	int	out	maximum parameter number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_param_schema: Read all the parameter data

Function Name	short READ_param_schema(...)
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Argument	variable name	type	[in/out]	descriptions
	index	int[]	out	parameter number
	value	int[]	out	parameter value
	context	string[]	out	parameter descriptions
	bound	string[]	out	upper limit & lower limit of parameter
	count	int	out	parameter number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_param_data: Read the parameter data in the given range

Function Name	short READ_param_data(...)			
Argument	variable name	type	[in/out]	descriptions
	ParamStart	int	in	parameter start number
	ParamEnd	int	in	parameter end number
	ParamData	int[]	out	parameter data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	※ When the specified parameter number does not exist on the controller or fails to read, ParamType will be set to -1			

WRITE_param_single: Write the single parameter value

Function Name	short WRITE_param_single(...)
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Argument	variable name	type	[in/out]	descriptions
	ParamID	int	in	parameter number
	val	int	in	set value
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.11 PLC Function

READ_plc_type: Read the type of PLC address

Function Name	short READ_plc_type(...)			
Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,O,C,S,A,R
	PlcType	short	out	0:byte 1:short 2:int
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_type2: Read the type and the size of PLC address

Function Name	short READ_plc_type2(...)
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Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,O,C,S,A,R
	PlcType	short	out	0:byte 1:short 2:int
	PlcStart	int	out	address start number
	PlcEnd	int	out	address end number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	The number of input & output depends on the selected I/O card			

READ_plc_addr: Read PLC address data

Function Name	short READ_plc_addr(...)			
Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,O,C,S,A,R
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcType	short	out	0:byte 1:short 2:int
	PlcDataB	byte[]	out	Plc data(byte)
	PlcDataS	short[]	out	Plc data(short)
	PlcDataI	int[]	out	Plc data(int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

Notes	The read value will be inputed in the array of PlcData(B,S,I). If the number fails to be read, the array value will be set to null.
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WRITE_plc_addr: Write PLC address data

Function Name	short WRITE_plc_addr(...)			
Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,C,S,R
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcType	short	in	0:byte 1:short 2:int
	PlcDataB	byte[]	in	Plc data(byte)
	PlcDataS	short[]	in	Plc data(short)
	PlcDataI	int[]	in	Plc data(int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_ver: PLC Version

Function Name	short READ_plc_ver(...)			
Argument	variable name	type	[in/out]	descriptions
	Version	string	out	Plc version information
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DOWNLOAD_plc_ladder: Download remote ladder file

Function Name	short DOWNLOAD_plc_ladder (...)			
Argument	variable name	type	[in/out]	descriptions
	Destination	string	in	download destination path
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_ibit: Read PLC I Bit address data

READ_plc_obit: Read PLC O Bit address data

READ_plc_cbit: Read PLC C Bit address data

READ_plc_sbit: Read PLC S Bit address data

READ_plc_abit: Read PLC A Bit address data

Function Name	short READ_plc_ibit(...) short READ_plc_obit(...) short READ_plc_cbit(...) short READ_plc_sbit(...) short READ_plc_abit(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	byte[]	out	Plc data(byte)

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
--------------	--

READ_plc_register: Read PLC Register address data

Function Name	short READ_plc_register(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	int[]	out	Plc data(int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_register: Read PLC Register address string data

Function Name	short READ_plc_register(...)			
Argument	variable name	type	[in/out]	descriptions
	RAddress	int	in	address
	PlcData	string	out	Plc data(string)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_timer: Read PLC Timer address data

Function Name	short READ_plc_timer(...)
---------------	---------------------------

Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcTimerValue	int[]	out	Plc Timer value
	PlcTimerSetting	int[]	out	Plc Timer setting
	PlcTimerState	short[]	out	Plc Timer status
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_counter: Read PLC Counter address data

Function Name	short READ_plc_timer(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcCounterValue	int[]	out	Plc Counter value
	PlcCounterSetting	int[]	out	Plc Counter setting
	PlcCounterState	short[]	out	Plc Counter status
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_plc_ibit: Write PLC I BIT address data

WRITE_plc_cbit: Write PLC C BIT address data

WRITE_plc_sbit: Write PLC S BIT address data

Function Name	short WRITE_plc_ibit(...) short WRITE_plc_cbit(...) short WRITE_plc_sbit(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	byte[]	in	Plc data(byte)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_plc_register: Write PLC Register address data

Function Name	short WRITE_plc_register(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	int[]	in	Plc data (int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.12 System Variable Function

READ_state_variable: Read system status variable data

Function Name	short READ_state_variable(...)			
Argument	variable name	type	[in/out]	descriptions
	StateStart	int	in	address start value
	StateStart	int	in	address end value
	StateVariable	int[]	out	system status variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_debug_variable: Read system diagnosis variable data

Function Name	short READ_debug_variable (...)			
Argument	variable name	type	[in/out]	descriptions
	DebugStart	int	in	address start value
	DebugEnd	int	in	address end value
	DebugVariable	int[]	out	system diagnosis variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions Notes: The system diagnostic variables 77 and 78 are specific information of controller. For the remaining system memory, please refer to diagnostic variable 7.			

READ_system_variable: Read system variable data(#)

Function Name	short READ_system_variable (...)			
Argument	variable name	type	[in/out]	descriptions
	SystemID	int	in	path number
	SystemStart	int	in	address start value
	SystemEnd	int	in	address end value
	DebugVariable	double[]	out	system variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_useTime: Read system usage status

Function Name	short READ_useTime (...)			
Argument	variable name	type	[in/out]	descriptions
	Status	String	out	current usage time
	TimeStart	String	out	start time
	TimeExpire	String	out	expire time
	TimeRemain	int	out	remaining time (hr)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions Notes: Only support the software version after 10.116.24x			

Read_remoteTime : Read system current time

Function Name	short READ_remoteTime (...)			
Argument	variable name	type	[in/out]	descriptions
	remoteTime	DateTime	out	current machine system time
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_remoteDate: Edit System Date

Function Name	short WRITE_remoteDate (...)			
Argument	variable name	type	[in/out]	descriptions
	Year	Int	out	year
	Month	Int	Out	month
	Day	Int	Out	day
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_remoteTime: Edit System Time

Function Name	short WRITE_remoteTime (...)
---------------	------------------------------

Argument	variable name	type	[in/out]	descriptions
	Hour	Int	Out	hour
	Minute	Int	Out	minute
	Second	Int	Out	second
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

ClearCache: Clear all the buffer in the RemoteAPI

Function Name	short ClearCache ()
Argument	N/A
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions Note: Clear all the buffer (ex: series number, mainboard, model, code, then call the related API to read the right data)

READ_SSV_GetDeviceInfo

Function Name	READ_SSV_GetDeviceInfo(...)
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SYNTEC

Argument	variable name	type	[in/out]	descriptions
	nAxisId	int	in	axis ID
	nFunctionCode	int	in	read what kind of information enum DevInfoFuncCode { SVPackModel = 0x11, SVPackSoftVer, SVPackSN, SVMotorModel, SVMotorSN, ENCSoftVer, ENCResolution, ENCSensorType, ENCSN, }
	szInfo	string	out	information value
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_ServiceReg

Function Name	READ_SerialStateVar_ServiceReg(...)
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Argument	variable name	type	[in/out]	descriptions
	nAxisType	int	in	AXIS : 0 SPLCA : 1 ROT : 2
	nDeviceID	int	in	device ID
	nHandle	int	out	When the registration is successful, the code of this registration will be returned, and will be used by other SerialStateVar functions.
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_ServiceUnReg

Function Name	READ_SerialStateVar_ServiceUnReg(int nHandle)			
Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_GetCapacity

Function Name	READ_SerialStateVar_GetCapacity(...)			
Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
	nCapacity	int	out	how many StateVar variable

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
--------------	--

READ_SerialStateVar_Dump

Function Name	READ_SerialStateVar_Dump(...)			
Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
	nLength	int	in	how many data structure of state variable specifications to capture
	tStateVarSpecList	List<TSerialStateVarSpec>	out	every data structure of state variable specifications
	nHexFormat	int	out	hexadecimal or decimal
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_GetValue

Function Name	READ_SerialStateVar_GetValue(...)
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SYNTEC

Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
	nLength	int	in	how many state variable to capture
	SerialStateVarList	List<Int32>	out	every state variable value
	nStatus	int	out	results FAIL = 0, SUCCESS, BUSY, EXCEPTION,
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.13 Update Related Functions of Controller

UPLOAD_software : update controller software

UPLOAD_plc_file : update controller PLC

UPLOAD_param_file : update controller parameters

Function Name	short Update_software (...) short Update_plc_file (...) short Update_param_file (...)
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Argument	variable name	type	[in/out]	descriptions
	Source	String	out	Path file name Software: *\package_xxxx.zip PLC: *\cnc.lad parameter: *\param.dat (Not support for ParamValue.db)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions. Notes: After the update, the controller must be rebooted to complete the update			

9.14 Appendix

READ_nc_OPLog meaning

Log data format (4Bytes)

Name	Data Type	Size	Descriptions
Event ID	UINT16	2-byte	buttons, alarms, PLC, time...etc.
Event Data	UINT16	2-byte	event value, such as PLC-bit value, keyboard corresponding value, alarm number & axis

Record column format

Event Name	Event ID	Event Data
StartUp	0x0002	Null
ShutDown	0x0003	Null

Event Name	Event ID	Event Data
KeyPressed	0x0005	
Date	0x0300~0x03FF 00000011aaaaaaaa a:Year	Current date bbbbbbbbcccccccc b:Month c:Date
Time	0x0400~0x04FF 00000100aaaaaaaa a: seconds	Current time bbbbbbbbcccccccc b: hours c: minutes
Alarm	0xWC00~0xWCFF zz001100aaaaaaaa a: ClassID z:Alarm ID(10~11bit)	Alarm ID bbbbbbcccccccccc b: Object ID c: Alarm ID(0~9bit) Yaskawa servo alarm requires 12bit to be fully recorded.
I-bit off	0x0010	Index
I-bit on	0x0011	Index
O-bit off	0x0012	Index
O-bit on	0x0013	Index
C-bit off	0x0014	Index
C-bit on	0x0015	Index
S-bit off	0x0016	Index
S-bit on	0x0017	Index
R	0x0020	Index

Event Name	Event ID	Event Data
P	0x0021	Index
@	0x0022	Index
L	0x0023	Index
D	0x0024	Index
K	0x0025	Index
ParameterOnChange	0x0030	Param No.
WorkPieceOnChange	0x0031	WorkPieceFrame ID
ToolCompensationOn Change	0x0032	aaaaaaaabbbbcccc a: ToolNo(which tool) b: AxisNo(which axis) c: ToolCompensationType
UserOnChange	0x0033	0x0033XXXX For user permissions, please refer to R5997 0009: SyntecLogIn(R5997=9) 0063: MakerLogIn(R5997=99) 0064: AdminLogIn(R5997=100) 0065: OtherLogIn(R5997=101) 03E7: LogOut(R5997=999) (After booting, it is in the log out state.) Other: XLogIn (Convert XXXX to decimal X)
人机启动	0x1002	Null
人机关闭	0x1003	Null
Action(undefined)	0x1004	The CRC16 value of the action name

Event Name	Event ID	Event Data
Action	0x1005	The mapping value of LogTable

9.15 RemoteAPI Application Instruction_Source

9.15.1 Project Settings

- Please refer to the attached example "SyntecRemoteExample", and attach "Syntec.RemoteCNC.dll" to the project reference.

Precautions

1. Please confirm the controller version first, and check the table below to find the corresponding RemoteAPI version.
2. If you use the v1 version of RemoteAPI, please install the 32 simulation software MacroDev first, and its version must same as the controller.
3. Syntec.OpenCNC.dll, Syntec.RemoteCNC.dll, Syntec.RemoteObj.dll, OCAPI.dll, OCUSER.dll... and other dlls need to be placed in the same folder as the main program.

Common Problem Solutions

1. The computer firewall needs to turn on port 5568, port 5570 for the controller to connect to the computer. "In Windows environment, you can go to Firewall> Advanced Settings> Input Rules> Add Rule> Port> TCP> Input 5568,5570> Allow all the connections"
2. Note that the computer has two network interface cards, and adjust the priority of the card connected to the controller to a higher level, so the connection can be made. "In the Windows environment, you can go to Internet and Sharing Center> Enter to setting of changing the interface card> Press F10 to show the toolbar> Advanced> Advanced settings> Adjust the priority of network interface card to a higher level"
3. If you find that the network is unstable and an error message displayed while using v4 version, please try to connect again after ten seconds.
4. If you found that Syntec.RemoteCNC.dll and Syntec.RemoteObj.dll are missing while using 1.0.12_v1 version, please go to the official website to download the 1.0.12_v1 again.

Note: If the above Windows operation appear error, please search for related settings by yourself.

RemoteAPI Version Comparison Table

Controller Version	RemoteAPI Version	Note
After 10.116.54.x	1.2.2	
After 10.116.54.x	1.2.1	Remove usage restrictions from the newer version of the controller
10.116.54.x ~ 10.118.60.x	1.2.0	reference Syntec.OpenCNC.dll is needed
10.116.54.x ~ 10.118.30.x	1.1.0	
10.116.36.x	1.0.12_v4	
10.116.24.x	1.0.12_v3	
10.116.10.x ~ 10.116.16.x	1.0.12_v2	
10.116.0.x	1.0.12_v1	Require the corresponding MacroDev installation

9.16 RemoteAPI Function Introduction_Source

9.16.1 Basic Data Type & Report Error

Data Type

Type Name	Size
byte	8 bits
short	16 bits
int	32 bits

float	32 bits
string	unlimited

Error Report Descriptions

Report Value (short)	Error Type	Descriptions
-18	Not supported	Controller doesn't support this function.
-17	Protocol error (Ethernet version only)	Data from Ethernet Board is incorrect. Contact with the service section or the section in charge.
-16	Socket error (Ethernet version only)	Investigate CNC power supply, Ethernet cable and I/F board.
-15	DLL file error	There is no DLL file for each CNC series corresponding to specified node.
-14	USBEmpty	USB is empty
-13	NoUSB	No USB is pulgin
-8	Handle number error	Get the library handle number.
-7	Version mismatch between the CNC/PMC and library	The CNC/PMC version does not match that of the library. Replace the library or the CNC/PMC control software.
-6	Abnormal library state	An unanticipated error occurred. Contact with the section in charge.
-2	Reset or stop request	The RESET or STOP button was pressed. Call the termination function.
-1	CNC Busy	Wait until the completion of CNC processing, or retry.

Report Value (short)	Error Type	Descriptions
0	Normal termination	Execution completed without any error!
1	Error(function is not executed, or not available)	Specific function which must be executed beforehand has not been executed.Otherwise that function is not available.
2	Error(data block length error, error of number of data)	Check and correct the data block length or number of data.
3	Error(data number error)	Check and correct the data number.
4	Error(data attribute error)	Check and correct the data attribute.
5	Error(data error)	Check and correct the data.
6	Error(no option)	There is no corresponding CNC option.
7	Error(write protection)	Write operation is prohibited.
8	Error(memory overflow)	CNC tape memory is overflowed.
9	Error(CNC parameter error)	CNC parameter is set incorrectly.
10	Error(buffer empty/full)	The buffer is empty or full.
11	Error(path number error)	A path number is incorrect.
12	Error(CNC mode error)	The CNC mode is incorrect.Correct the CNC mode.
13	Error(CNC execution rejection)	The execution at the CNC is rejected.Check the condition of execution.
14	Error(Data server error)	Some errors occur at the data server.

Report Value (short)	Error Type	Descriptions
15	Error(alarm)	The function cannot be executed due to an alarm in CNC.Remove the cause of alarm.
16	Error(stop)	CNC status is stop or emergency.
17	Error(State of data protection)	Data is protected by the CNC data protection function.
18	Error(Not found Machine ID)	Please Check or not send CNC_CONNECTION command.
19	Error(No out)	Please Check NO.
20	Error(Need to Update RemoteCnc Version)	RemoteAPI version is too old for connected controller, need to update RemoteAPI version.

9.16.2 Basic Function

isUSBExist : Whether there is an USB plugged in

Function Name	bool isUSBExist()			
Argument	variable name	type	[in/out]	descriptions
	N/A			
Return Value	True => there is an USB plugged in, False => there isn't an USB plugged in			

SeriesNo: Controller Series No.

Function Name	string SeriesNo(...)											
Argument	<table><tr><td>variable name</td><td>type</td><td>[in/out]</td><td>descriptions</td></tr><tr><td colspan="4">N/A</td></tr></table>				variable name	type	[in/out]	descriptions	N/A			
variable name	type	[in/out]	descriptions									
N/A												
Return Value	controller series number or null string											

CncOption: Controller Software Option

Function Name	string CncOption(...)											
Argument	<table><tr><td>variable name</td><td>type</td><td>[in/out]</td><td>descriptions</td></tr><tr><td colspan="4">N/A</td></tr></table>				variable name	type	[in/out]	descriptions	N/A			
variable name	type	[in/out]	descriptions									
N/A												
Return Value	software options of controller (apart by spaces)											

MainBoardPlatformName: Mainboard Model of Controller

Function Name	string MainBoardPlatformName (...)				
Argument	<table><tr><td>variable name</td><td>type</td><td>[in/out]</td><td>descriptions</td></tr></table>	variable name	type	[in/out]	descriptions
variable name	type	[in/out]	descriptions		
	N/A				
Return Value	controller mainboard model or null string				

READ_information: Basic Information

Function Name	short READ_information(...)
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Argument	variable name	type	[in/out]	descriptions
	Axes	short	out	number of axes
	CncType	string	out	ex : '18' : Series 180/180i
	MaxAxes	short	out	maximum number of axes
	Series	string	out	M/T type
	Nc_Ver	string	out	NC version
	AxisName	string[]	out	coordinate name of each axis
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_status: Status Information

Function Name	short READ_status(...)			
Argument	variable name	type	[in/out]	descriptions
	MainProg	string	out	main program name
	CurProg	string	out	current program name
	CurSeq	x	out	does not support, default = -1
	Mode	string	out	ex:"MDI", "MEM"...
	Status	string	out	ex:"STOP", "START"...
	Alarm	string	out	ex:"ALARM", "*****"
	EMG	string	out	ex:"EMG", "*****"

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
Note	Alarm: When an alarm occurs, "ALARM" is returned; when no alarm occurs, "*****" is returned. EMG: When emergency stop happens, "EMG" is returned; when no emergency stop happens, "*****" is returned

READ_position: Coordinate Information

Function Name	short READ_position(...)			
Argument	variable name	type	[in/out]	descriptions
	AxisName	string[]	out	coordinate name of each axis
	DecPoint	short	out	decimal places
	Unit	string[]	out	unit
	Mach	float[]	out	machine coordinate
	Abs	float[]	out	absolute coordinate
	Rel	float[]	out	relative coordinate
	Dist	float[]	out	remaining distance
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_relpos: Set the position value of relative coordinate

Function Name	short WRITE_relpos(...)
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Argument	variable name	type	[in/out]	descriptions
	AxisName	string	in	axis coordinate name
	PosValue	double	in	position value of relative coordinate
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_gcode: G Code

Function Name	short READ_gcode(...)			
Argument	variable name	type	[in/out]	descriptions
	Gdata	string[]	out	G Code
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_othercode: Else Codes(H Code,D Code,T Code,M Code,B Code,F Code,S Code)

Function Name	short READ_othercode(...)
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Argument	variable name	type	[in/out]	descriptions
	HCode	int	out	H Code
	DCode	int	out	D Code
	TCode	int	out	T Code
	MCode	int	out	M Code
	FCode	int	out	F Code
	SCode	int	out	S Code
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_spindle: Feedrate/Spindle Speed

Function Name	short READ_spindle(...)			
Argument	variable name	type	[in/out]	descriptions
	OvFeed	float	out	Feed Rate Over Ride
	OvSpindle	float	out	Spindle Over Ride
	ActFeed	float	out	Actual Feedrate
	ActSpindle	int	out	Actual Spindle Speed
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_time: Time

Function Name	short READ_time(...)
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Argument	variable name	type	[in/out]	descriptions
	PowerOnTime	int	out	boot time(sec)
	AccumulateCuttingTime	int	out	cutting time(sec)
	CuttingTimePerCycle	int	out	cycle time(sec)
	WorkTime	int	out	machining time(sec)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_part_count: Number of Workpieces

Function Name	short READ_part_count(...)			
Argument	variable name	type	[in/out]	descriptions
	part_count	int	out	number of workpiece
	require_part_count	Int	Out	required number of workpiece
	Total_part_count	int	out	total number of workpiece
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DOWNLOAD_work_record: Download remote machining record file

Function Name	short DOWNLOAD_work_record (...)			
Argument	variable name	type	[in/out]	descriptions
	Destination	string	in	download path

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
--------------	--

IsDipoleSupported: Whether it is possible to connect via dipole within the given timeout time

Function Name	bool IsDipoleSupported (...)			
Argument	variable name	type	[in/out]	descriptions
	IPAddr	string	in	destination IP address
	Timeout	uint	in	given timeout time (ms)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_MakerConfigInfo: Machinery Information

Function Name	short READ_MakerConfigInfo(...)			
Argument	variable name	type	[in/out]	descriptions
	szModel	string	out	machine model
	szMachSN	string	out	machine series no.
	szDate	string	out	machine manufacturing date
	szDevSN	string	out	device series number
	szPhone	string	out	machinery phone number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_MakerConfigInfo: Set the information of machinery

Function Name	short WRITE_MakerConfigInfo(...)			
Argument	variable name	type	[in/out]	descriptions
	szModel	string	in	machine model
	szMachSN	string	in	machine series no.
	szDate	string	in	machine manufacturing date
	szDevSN	string	in	device series number
	szPhone	string	in	machinery phone number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.16.3 Alarm Related Function**READ_alm_current: Current Alarm**

Function Name	short READ_alm_current(...)			
Argument	variable name	type	[in/out]	descriptions
	IsAlarm	bool	out	whether there is any alarm be triggered
	AlmMsg	String[]	out	get the information of current alarm
	AlmTime	DateTime[]	out	get the triggered time of current alarm
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

note	The arrangement rule of the alarm array is from new to old. The format of alarm message is("motion" "number" "descriptions")
------	---

READ_alm_history: Alarm History

Function Name	short READ_alm_history(...)			
Argument	variable name	type	[in/out]	descriptions
	AlmMsg	string[]	out	alarm message
	AlmTime	DateTime[]	out	alarm time
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
note	The arrangement rule of the alarm array is from new to old. The format of alarm message is("motion" "number" "descriptions")			
Function Name	short READ_alm_history(...)			
Argument	variable name	type	[in/out]	descriptions
	AlmMsg	string[]	out	alarm message
	AlmTime	DateTime[]	out	alarm time
	Duration	uint[]	out	duration, in sec
	Clear	bool[]	out	whether the alarm(s) is cleared
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	• Only support 10.116.54Q, 10.118.0K, 10.118.11 or after • The arrangement rule of the alarm array is from new to old. The format of alarm message is("motion" "number" "descriptions")			

9.16.4 Tool Offset Function

READ_offset_title: Read the titles of tool offset

Function Name	short READ_offset_title(...)			
Argument	variable name	type	[in/out]	descriptions
	OffsetTitle	string[]	out	titles
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	series	return value descriptions		model
	Syntec M series	{ "RADIUS GEOM", "RADIUS WEAR", "LENGTH GEOM", "LENGTH WEAR" }		Mill, Drill, Wood, GlassGrind
	Syntec T series	{ "WEAR X", "WEAR Z", "WEAR A", "LENGTH X", "LENGTH Y", "LENGTH A", "TOOL NOSE RADIUS", "TOOL NOSE R WEAR", "TOOL NOSE" }		Lathe

READ_offset_all: Read the offset of all tools

Function Name	short READ_offset_all(...)			
Argument	variable name	type	[in/out]	descriptions
	OffsetData	double[][]	out	offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	The second array of Offset Data, with the title name (Length Geom...). Get the data start from the first tool.			

READ_offset_scope: Read the tool offset from the given range.

Function Name	short READ_offset_scope(...)			
Argument	variable name	type	[in/out]	descriptions
	StartNumber	short	in	start no. (start from 1)
	EndNumber	short	in	stop no.
	OffsetData	double[][]	out	offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_offset_single: Read the single tool offset

Function Name	short READ_offset_single(...)			
Argument	variable name	type	[in/out]	descriptions
	ofNumber	short	in	set the offset number
	OffsetData	double[]	out	offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_offset_all: Write offset of all tools

Function Name	short WRITE_offset_all(...)			
Argument	variable name	type	[in/out]	descriptions
	OffsetData	double[][]	in	set the offset data

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
Notes	Start from the first tool, until finish writing all the offset.

WRITE_offset_single: Write offset of single tool

Function Name	short WRITE_offset_single(...)			
Argument	variable name	type	[in/out]	descriptions
	ofNumber	short	in	set the offset number
	OffsetData	double[]	in	set the offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_offset_count: Read the number of offset data

Function Name	short READ_offset_count(...)			
Argument	variable name	type	[in/out]	descriptions
	Count	short	out	number of offset data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.16.5 Workpiece Coordinate Function

READ_work_coord_axis: Read the title of workpiece coordinate

Function Name	short READ_work_coord_title(...)			
Argument	variable name	type	[in/out]	descriptions
	WorkCoordTitle	string[]	out	title name
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_work_coord_all: Read all the workpiece coordinate

Function Name	short READ_work_coord_all(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string[]	out	item ,ex:EXT,G54,G55...
	WorkCoord	float[][]	out	workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	CoordName like: EXT,MPGShift, G54, G55, G56, G57, G58, G59 , G54P7, G54P8, G54P100等			

READ_work_coord_scope: Read the workpiece coordinate in the given range

Function Name	short READ_work_coord_scope(...)
---------------	----------------------------------

Argument	variable name	type	[in/out]	descriptions
	StartNumber	short	in	start no.
	EndNumber	short	in	stop no.
	CoordName	string[]	out	item, ex:EXT,G54,G55...
	WorkCoord	float[][]	out	workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	CoordName like: EXT,MPGShift, G54, G55, G56, G57, G58, G59 , G54P7, G54P8, G54P100等 The number corresponds to the workpiece coordinate name as follows			
	workpiece name		corresponding no.	
	EXT		0	
	MPG Shift		1	
	G54		2	
	G55		3	
	G56		4	
	G57		5	
	G58		6	
	G59		7	
	G54 P7~P100		8~101	

READ_work_coord_single: Read the single workpiece coordinate

Function Name	short READ_work_coord_single(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string	in	item, ex:EXT,G54,G55...
	WorkCoord	float[]	out	workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_work_coord_all: Write all the workpiece coordinate

Function Name	short WRITE_work_coord_all(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string[]	in	setting item, ex:EXT,G54,G55...
	WorkCoord	float[][]	in	set the workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_work_coord_single: Write single workpiece coordinate

Function Name	short WRITE_work_coord_single(...)			
Argument	variable name	type	[in/out]	descriptions
	CoordName	string	in	setting item, ex:EXT,G54,G55...
	WorkCoord	float[]	in	set the workpiece coordinate data

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
--------------	--

READ_work_coord_count: Read the number of workpiece coordinate

Function Name	short READ_work_coord_count(...)			
Argument	variable name	type	[in/out]	descriptions
	Count	short	out	number of workpiece coordinate data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.16.6 Macro Variable Function(Global Variable)

READ_macro_all: Read all Macro variable (global variable)

Function Name	short READ_macro_all(...)			
Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int[]	out	Macro no.
	MacroData	double[]	out	Macro variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_macro_scope: Read Macro variable (global variable) in the given range

Function Name	short READ_macro_scope(...)			
Argument	variable name	type	[in/out]	descriptions
	StartNumber	int	in	start number (start from 1)
	EndNumber	int	in	stop number
	MacroNumber	int[]	out	Macro number
	MacroData	double[]	out	Macro variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_macro_all: Write all the Macro variable (global variable)

Function Name	short WRITE_macro_all(...)			
Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int[]	in	set Macro number
	MacroData	double[]	in	set Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_macro_single: Read single Macro variable(global variable)

Function Name	short READ_macro_single(...)
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Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int	in	Macro number
	MacroData	double	out	Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_macro_single: Write single Macro variable(global variable)

Function Name	short WRITE_macro_single(...)			
Argument	variable name	type	[in/out]	descriptions
	MacroNumber	int	in	set Macro number
	MacroData	double	in	set Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_macro_variable: Read the start and end number of Macro variable(global variable)

Function Name	short READ_macro_variable(...)			
Argument	variable name	type	[in/out]	descriptions
	Variable	int[]	out	the start and end number of Macro variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

Notes

Declare array: Variable[type][0]:Start Number
Variable[type][1]:End Number
如:
Variable[0][0]:100
Variable[0][1]:199
Variable[1][0]:500
Variable[1][1]:599

9.16.7 NC Program Function

WRITE_nc_main: Assign the specific NC program

Function Name	short WRITE_nc_main(...)			
Argument type 1	variable name	type	[in/out]	descriptions
	szProgName	string	in	program name
Argument type 2	variable name	type	[in/out]	descriptions
	szProgName	int	in	program name
	nCoordID	int	in	Path number
	nLineNumber	int	in	start line number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	• back-end controller support version: 10.116.10x or after • back-end controller version: 10.116.10x-10.116.16x After assign the NC program, the controller mode couldn't be changed. • API of Argument type 2 is only provided by Syntec.RemoteCNC.Win32.dll after version 10.116.54A • When using Argument type 2, refer to: 多轴群规划与MST多通道应用手册			

READ_nc_mem_list: Read the internal NC program list of machine

Function Name	short READ_nc_mem_list(...)			
Argument	variable name	type	[in/out]	descriptions
	NcList	string[][]	out	NC program list
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	Since the NC lists of machineries are different, the following format is recommended: NcList[][0]:NC Name NcList[][1]:Size (byte) NcList[][2]:Last Write DateTime NcList[][3]: file / directory Note: If there is no NC program list, return -1(CNCBUSY), please pay attention to this.			

UPLOAD_nc_mem: Upload NC program to controller

Function Name	short UPLOAD_nc_mem(...)			
Argument	variable name	type	[in/out]	descriptions
	Source	string	in	the full path name of machine
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DOWNLOAD_nc_mem: Download NC program

Function Name	short UPLOAD_nc_mem(...)
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Argument	variable name	type	[in/out]	descriptions
	Source	string	in	NC program name
	Destination	string	in	folder path
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DEL_nc_mem: Delete the NC program in the controller

Function Name	short DEL_nc_mem(...)			
Argument	variable name	type	[in/out]	descriptions
	Name	string	in	name
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_nc_freespace: Remaining Space(k)

Function Name	short READ_nc_freespace(...)			
Argument	variable name	type	[in/out]	descriptions
	FreeSpace	Long	out	remaining space(k)
Return Value	0: Operation completed, else please refer to attachment 1. return error descriptions			

READ_nc_OPLog: Read the operation log

Function Name	short READ_nc_OPLog(...)			
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Argument	variable name	type	[in/out]	descriptions
	OPLog	string[]	out	operation record
	count	int	in/out	number of record
Return Value	0: Operation completed, else please refer to attachment 1. return error descriptions			
Notes	1. 'Count' input the number of the log to be read, and returns the number of log be read. 2. When the input parameter count is 0, all operation log will be returned. 3. When a timeout error occurs, you can use the SynetcRemoteCNC(ip,timeout) constructor to increase the timeout. Timeout=0 means none, and the unit of timeout is ms. 4. The OPLog returned can refer to the appendix for relevant information Note: If there is no Log, return the original array and write "No Log". ⚠ This is NOT supported for V12.			

9.16.8 System Parameter Function

READ_param_max: Read the maximum parameter number of machine

Function Name	short READ_param_max(...)			
Argument	variable name	type	[in/out]	descriptions
	MaxNumber	int	out	maximum parameter number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_param_schema: Read all the parameter data

Function Name	short READ_param_schema(...)
---------------	------------------------------

Argument	variable name	type	[in/out]	descriptions
	index	int[]	out	parameter number
	value	int[]	out	parameter value
	context	string[]	out	parameter descriptions
	bound	string[]	out	upper limit & lower limit of parameter
	count	int	out	parameter number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_param_data: Read the parameter data in the given range

Function Name	short READ_param_data(...)			
Argument	variable name	type	[in/out]	descriptions
	ParamStart	int	in	parameter start number
	ParamEnd	int	in	parameter end number
	ParamData	int[]	out	parameter data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	※ When the specified parameter number does not exist on the controller or fails to read, ParamType will be set to -1			

WRITE_param_single: Write the single parameter value

Function Name	short WRITE_param_single(...)
---------------	-------------------------------

Argument	variable name	type	[in/out]	descriptions
	ParamID	int	in	parameter number
	val	int	in	set value
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.16.9 PLC Function

READ_plc_type: Read the type of PLC address

Function Name	short READ_plc_type(...)			
Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,O,C,S,A,R
	PlcType	short	out	0:byte 1:short 2:int
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_type2: Read the type and the size of PLC address

Function Name	short READ_plc_type2(...)
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Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,O,C,S,A,R
	PlcType	short	out	0:byte 1:short 2:int
	PlcStart	int	out	address start number
	PlcEnd	int	out	address end number
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			
Notes	The number of input & output depends on the selected I/O card			

READ_plc_addr: Read PLC address data

Function Name	short READ_plc_addr(...)			
Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,O,C,S,A,R
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcType	short	out	0:byte 1:short 2:int
	PlcDataB	byte[]	out	Plc data(byte)
	PlcDataS	short[]	out	Plc data(short)
	PlcDataI	int[]	out	Plc data(int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

Notes	The read value will be inputed in the array of PlcData(B,S,I). If the number fails to be read, the array value will be set to null.
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WRITE_plc_addr: Write PLC address data

Function Name	short WRITE_plc_addr(...)			
Argument	variable name	type	[in/out]	descriptions
	Addr	string	in	ex:I,C,S,R
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcType	short	in	0:byte 1:short 2:int
	PlcDataB	byte[]	in	Plc data(byte)
	PlcDataS	short[]	in	Plc data(short)
	PlcDataI	int[]	in	Plc data(int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_ver: PLC Version

Function Name	short READ_plc_ver(...)			
Argument	variable name	type	[in/out]	descriptions
	Version	string	out	Plc version information
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

DOWNLOAD_plc_ladder: Download remote ladder file

Function Name	short DOWNLOAD_plc_ladder (...)			
Argument	variable name	type	[in/out]	descriptions
	Destination	string	in	download destination path
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_ibit: Read PLC I Bit address data

READ_plc_obit: Read PLC O Bit address data

READ_plc_cbit: Read PLC C Bit address data

READ_plc_sbit: Read PLC S Bit address data

READ_plc_abit: Read PLC A Bit address data

Function Name	short READ_plc_ibit(...) short READ_plc_obit(...) short READ_plc_cbit(...) short READ_plc_sbit(...) short READ_plc_abit(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	byte[]	out	Plc data(byte)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_register: Read PLC Register address data

Function Name	short READ_plc_register(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	int[]	out	Plc data(int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_register: Read PLC Register address string data

Function Name	short READ_plc_register(...)			
Argument	variable name	type	[in/out]	descriptions
	RAddress	int	in	address
	PlcData	string	out	Plc data(string)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_timer: Read PLC Timeraddress data

Function Name	short READ_plc_timer(...)
---------------	---------------------------

Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcTimerValue	int[]	out	Plc Timer value
	PlcTimerSetting	int[]	out	Plc Timer setting
	PlcTimerState	short[]	out	Plc Timer status
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_plc_counter: Read PLC Counter address data

Function Name	short READ_plc_timer(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcCounterValue	int[]	out	Plc Counter value
	PlcCounterSetting	int[]	out	Plc Counter setting
	PlcCounterState	short[]	out	Plc Counter status
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_plc_ibit: Write PLC I BIT address data

WRITE_plc_cbit: Write PLC C BIT address data

WRITE_plc_sbit: Write PLC S BIT address data

Function Name	short WRITE_plc_ibit(...) short WRITE_plc_cbit(...) short WRITE_plc_sbit(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	byte[]	in	Plc data(byte)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_plc_register: Write PLC Registeraddress data

Function Name	short WRITE_plc_register(...)			
Argument	variable name	type	[in/out]	descriptions
	PlcStart	int	in	address start value
	PlcEnd	int	in	address end value
	PlcData	int[]	in	Plc data (int)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.16.10 System Variable Function

READ_state_variable: Read system status variable data

Function Name	short READ_state_variable(...)			
Argument	variable name	type	[in/out]	descriptions
	StateStart	int	in	address start value
	StateStart	int	in	address end value
	StateVariable	int[]	out	system status variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_debug_variable: Read system diagnosis variable data

Function Name	short READ_debug_variable (...)			
Argument	variable name	type	[in/out]	descriptions
	DebugStart	int	in	address start value
	DebugEnd	int	in	address end value
	DebugVariable	int[]	out	system diagnosis variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions Notes: The system diagnostic variables 77 and 78 are specific information of controller. For the remaining system memory, please refer to diagnostic variable 7.			

READ_system_variable: Read system variable data(#)

Function Name	short READ_system_variable (...)			
Argument	variable name	type	[in/out]	descriptions
	SystemID	int	in	path number
	SystemStart	int	in	address start value
	SystemEnd	int	in	address end value
	DebugVariable	double[]	out	system variable data
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_useTime: Read system usage status

Function Name	short READ_useTime (...)			
Argument	variable name	type	[in/out]	descriptions
	Status	String	out	current usage time
	TimeStart	String	out	start time
	TimeExpire	String	out	expire time
	TimeRemain	int	out	remaining time (hr)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions Notes: Only support the software version after 10.116.24x			

Read_remoteTime : Read system current time

Function Name	short READ_remoteTime (...)			
Argument	variable name	type	[in/out]	descriptions
	remoteTime	DateTime	out	current machine system time
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_remoteDate: Edit System Date

Function Name	short WRITE_remoteDate (...)			
Argument	variable name	type	[in/out]	descriptions
	Year	Int	out	year
	Month	Int	Out	month
	Day	Int	Out	day
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

WRITE_remoteTime: Edit System Time

Function Name	short WRITE_remoteTime (...)			
Argument	variable name	type	[in/out]	descriptions
	Hour	Int	Out	hour
	Minute	Int	Out	minute
	Second	Int	Out	second

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
--------------	--

ClearCache: Clear all the buffer in the RemoteAPI

Function Name	short ClearCache ()
Argument	N/A
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions Note: Clear all the buffer (ex: series number, mainboard, model, code, then call the related API to read the right data)

READ_SSV_GetDeviceInfo

Function Name	READ_SSV_GetDeviceInfo(...)			
Argument	variable name	type	[in/out]	descriptions
	nAxisId	int	in	axis ID
	nFunctionCode	int	in	read what kind of information enum DevInfoFuncCode { SVPackModel = 0x11, SVPackSoftVer, SVPackSN, SVMotorModel, SVMotorSN, ENCSoftVer, ENCResolution, ENCSensorType, ENCSN, }
	szInfo	string	out	information value

Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions
--------------	--

READ_SerialStateVar_ServiceReg

Function Name	READ_SerialStateVar_ServiceReg(...)			
Argument	variable name	type	[in/out]	descriptions
	nAxisType	int	in	AXIS : 0 SPLCA : 1 ROT : 2
	nDeviceID	int	in	device ID
	nHandle	int	out	When the registration is successful, the code of this registration will be returned, and will be used by other SerialStateVar functions.
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_ServiceUnReg

Function Name	READ_SerialStateVar_ServiceUnReg(int nHandle)			
Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_GetCapacity

Function Name	READ_SerialStateVar_GetCapacity(...)
---------------	--------------------------------------

Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
	nCapacity	int	out	how many StateVar variable
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_Dump

Function Name	READ_SerialStateVar_Dump(...)			
Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
	nLength	int	in	how many data structure of state variable specifications to capture
	tStateVarSpecList	List<TSerialStateVarSpec>	out	every data structure of state variable specifications
	nHexFormat	int	out	hexadecimal or decimal
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

READ_SerialStateVar_GetValue

Function Name	READ_SerialStateVar_GetValue(...)
---------------	-------------------------------------

Argument	variable name	type	[in/out]	descriptions
	nHandle	int	in	registration code of the specified update service
	nLength	int	in	how many state variable to capture
	SerialStateVarList	List<Int 32>	out	every state variable value
	nStatus	int	out	results FAIL = 0, SUCCESS, BUSY, EXCEPTION,
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions			

9.16.11 Update Related Functions of Controller

UPLOAD_software : update controller software

UPLOAD_plc_file : update controller PLC

UPLOAD_param_file : update controller parameters

Function Name	short Update_software (...) short Update_plc_file (...) short Update_param_file (...)
---------------	---

Argument	variable name	type	[in/out]	descriptions
	Source	String	out	Path file name Software: *\\package_xxxx.zip PLC: *\\cnc.lad parameter: *\\param.dat (Not support for ParamValue.db)
Return Value	0: Operation completed, else please refer to 3-2 Return Error Descriptions. Notes: After the update, the controller must be rebooted to complete the update			

9.16.12 Appendix

READ_nc_OPLog meaning

Log data format (4Bytes)

Name	Data Type	Size	Descriptions
Event ID	UINT16	2-byte	buttons, alarms, PLC, time...etc.
Event Data	UINT16	2-byte	event value, such as PLC-bit value, keyboard corresponding value, alarm number & axis

Record column format

Event Name	Event ID	Event Data
StartUp	0x0002	Null
ShutDown	0x0003	Null
KeyPressed	0x0005	

Event Name	Event ID	Event Data
Date	0x0300~0x03FF 00000011aaaaaaaa a:Year	Current date bbbbbbbbcccccccc b:Month c:Date
Time	0x0400~0x04FF 00000100aaaaaaaa a: seconds	Current time bbbbbbbbcccccccc b: hours c: minutes
Alarm	0xWC00~0xWCFF zz001100aaaaaaaa a: ClassID z:Alarm ID(10~11bit)	Alarm ID bbbbbbcccccccc b: Object ID c: Alarm ID(0~9bit) Yaskawa servo alarm requires 12bit to be fully recorded.
I-bit off	0x0010	Index
I-bit on	0x0011	Index
O-bit off	0x0012	Index
O-bit on	0x0013	Index
C-bit off	0x0014	Index
C-bit on	0x0015	Index
S-bit off	0x0016	Index
S-bit on	0x0017	Index
R	0x0020	Index
P	0x0021	Index

Event Name	Event ID	Event Data
@	0x0022	Index
L	0x0023	Index
D	0x0024	Index
K	0x0025	Index
ParameterOnChange	0x0030	Param No.
WorkPieceOnChange	0x0031	WorkPieceFrame ID
ToolCompensationOnChange	0x0032	aaaaaaaabbbbcccc a: ToolNo(which tool) b: AxisNo(which axis) c: ToolCompensationType
UserOnChange	0x0033	0x0033XXXX For user permissions, please refer to R5997 0009: SyntecLogIn(R5997=9) 0063: MakerLogIn(R5997=99) 0064: AdminLogIn(R5997=100) 0065: OtherLogIn(R5997=101) 03E7: LogOut(R5997=999) (After booting, it is in the log out state.) Other: XLogIn (Convert XXXX to decimal X)
人机启动	0x1002	Null
人机关闭	0x1003	Null
Action(undefined)	0x1004	The CRC16 value of the action name
Action	0x1005	The mapping value of LogTable

9.17 RemoteAPI System Introduction_Source

9.17.1 System Outline

Solution Framework

Syntec Dipole function separates the human machine interface from the core (Figure 1 & Figure 2), allowing users to control the back end controller via the Internet through front end applications (such as standard human machine interface). Users can use this framework for remote monitoring and diagnosis. The development environment of front end applications is no longer limited to Windows CE, and general applications of Windows XP, Windows 7,... can be developed, creating unlimited possibilities.

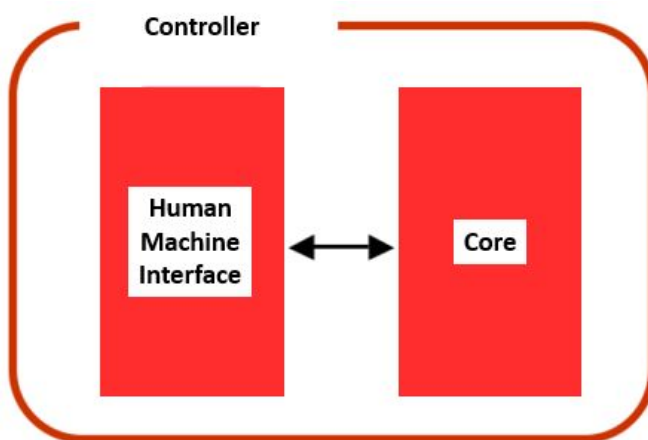


Figure 1. Original Framework of Controller

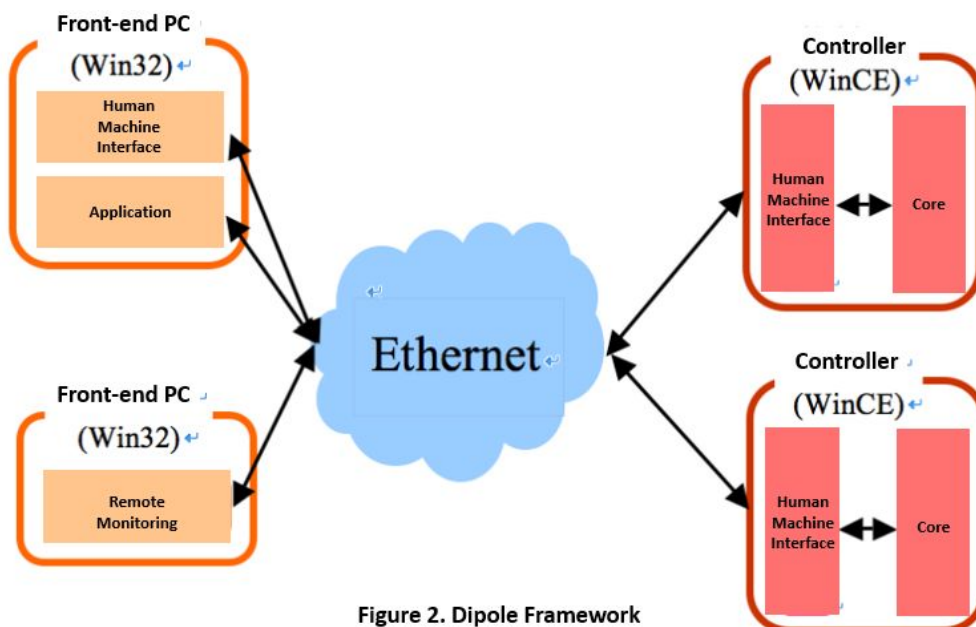


Figure 2. Dipole Framework

This user manual teaches users how to install CNC simulation software to the front end Windows user terminal, and start to use the functions of RemoteCNC one-to-many API.

How to set the controller to turn on Dipole through the human machine interface

Servo setting is on the human machine interface FenuBar: (The interface will be slightly different from different controller.)

1. F6 Parameter settings → F10 Next page → F7 Core Server(Figure 3).
2. F5 Maintain → F2 Internet settings → F5 Core server



Figure 3 (a)



Figure 3 (b)



Figure 3 (c)

The Dipole configuration file of the back end is located in \DiskC\WinCE\Shared\DipoleSettings.xml. In addition to editing the configuration file with a text editor (please refer to "Appendix 1 Back-end Dipole Configuration File"), you can also directly use the human machine interface to modify the settings of Dipole.



This FenuBar function will open the "Core Server Setting Page" (Figure 4).

The following is the description of each parameter:

- "Whether to turn on the server when booting up" is whether to automatically activate the core Dipole function when booting up.
- "Timeout" means that when the network has no response after this time, the network connection will be disconnected.

After the user completes the core Dipole settings, pressing "F3 Confirm" to save the settings, or press "F4 Cancel" to recover the settings. After setting, the Dipole function will be automatically activated when next time booting up.



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10 OS Transformation Tool Operation Manual

平台转换工具操作手册

[Abstract](#) [Installation](#) [DosTox86](#) [x86ToARM](#) [CEToLinux](#)

SYNTEC controller has upgraded from the early DOS system to CE6 system (also known as x86 system), and now it has been converted to CE7 system (also known as ARM system), and the hardware has been improved from the initial need to use CF card to no CF card.

During this process, no matter the software or hardware changes, it is accompanied by changes in system architecture and human-machine screen, so the simple backup action can no longer cope with the maintenance needs.

To simplify SOP for front-line personnel during maintenance, a software tool has been provided to assist front-line personnel in data conversion, which is also packaged into an installation package that can be installed on the controller panel.

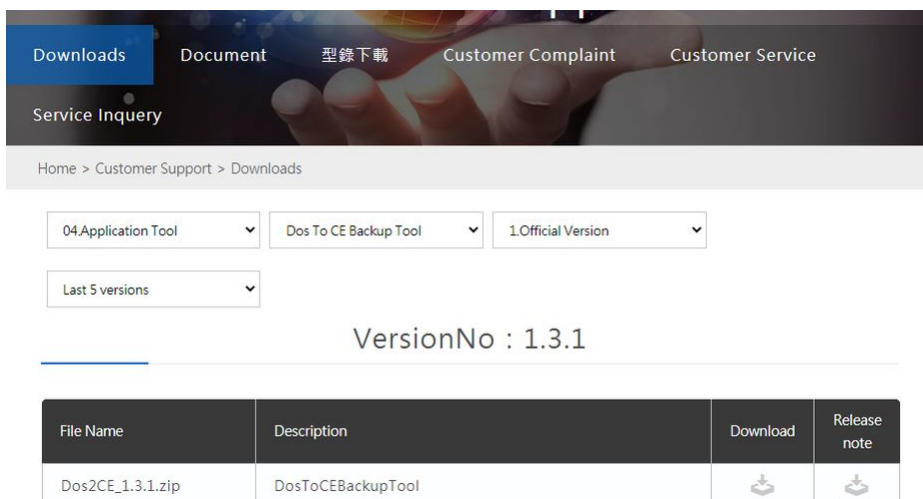
This tool includes two items:

- Dos to x86
- x86 to ARM

The relevant instructions are detailed in this manual.

[Abstract](#) [Installation](#) [DosTox86](#) [x86ToARM](#) [CEToLinux](#)

- Please download the tool software from our website :
- <https://www.syntecclub.com/Download.aspx>



It is a portable application and can be used after unzipping.

1. DOS2CE contents can be seen after unpacking.

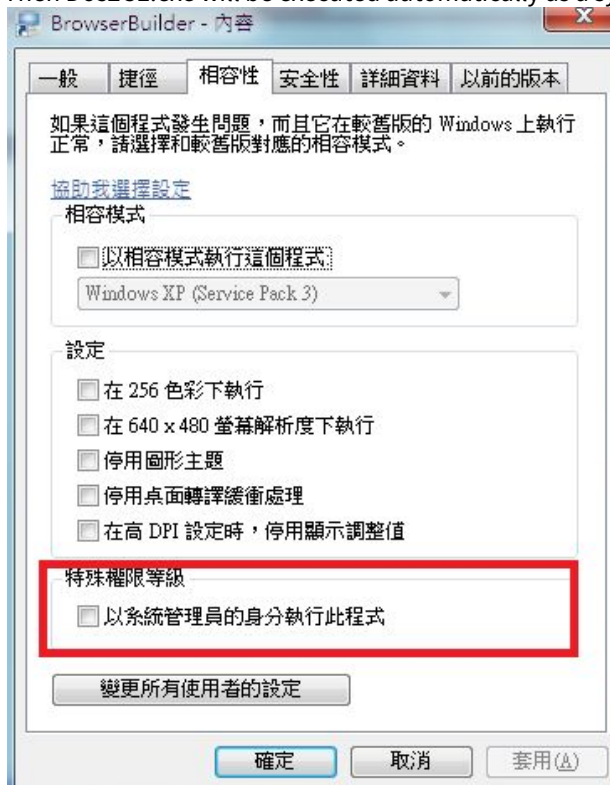


2. Double click on DOS2CE\Dos2CE.exe to use.

package	2014/2/18 上午 0...	檔案資料夾	
zh-CHS	2014/2/18 上午 0...	檔案資料夾	
zh-CHT	2014/2/18 上午 0...	檔案資料夾	
Dos2CE.exe	2014/2/17 下午 0...	應用程式	96 KB
Dos2CE.ini	2014/2/17 下午 0...	Configuration Se...	1 KB
icon.ico	2014/2/17 下午 0...	圖示	67 KB
ICSharpCode.SharpZLib.dll	2005/7/15 下午 0...	應用程式擴充	72 KB
MIOpenInstaller.Utility.dll	2013/10/2 下午 0...	應用程式擴充	153 KB

3. Remark: To set it to "Execute as system administrator"

- a. Right-click on Dos2CE.exe and click on "Content".
- b. Select "Compatibility" and check the box "Run this program as system administrator".
- c. Press OK
- d. Then Dos2CE.exe will be executed automatically as a system administrator.

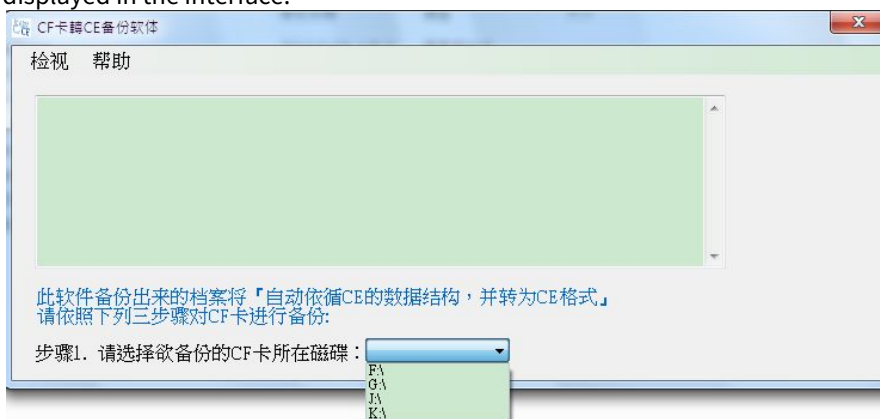


10.1 Operation method

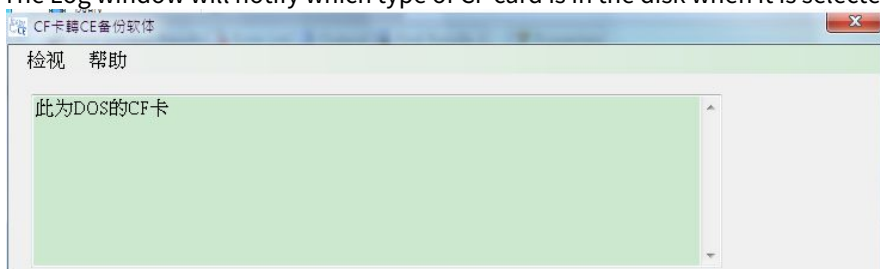
1. Insert the CF card to be backed up.
2. Open the tool and select "DOS to CE".



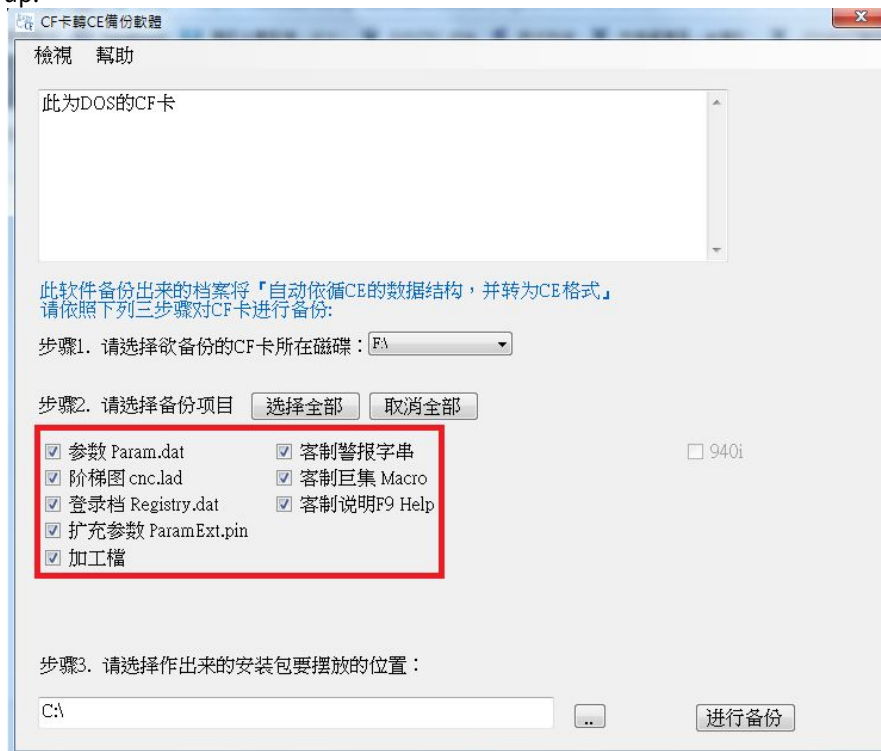
3. Select the drive where the CF card is located in the interface. Only the removable device will be displayed in the interface.



4. The Log window will notify which type of CF card is in the disk when it is selected.



5. Check the boxes for the files to be backed up, and uncheck the boxes for the files not to be backed up.

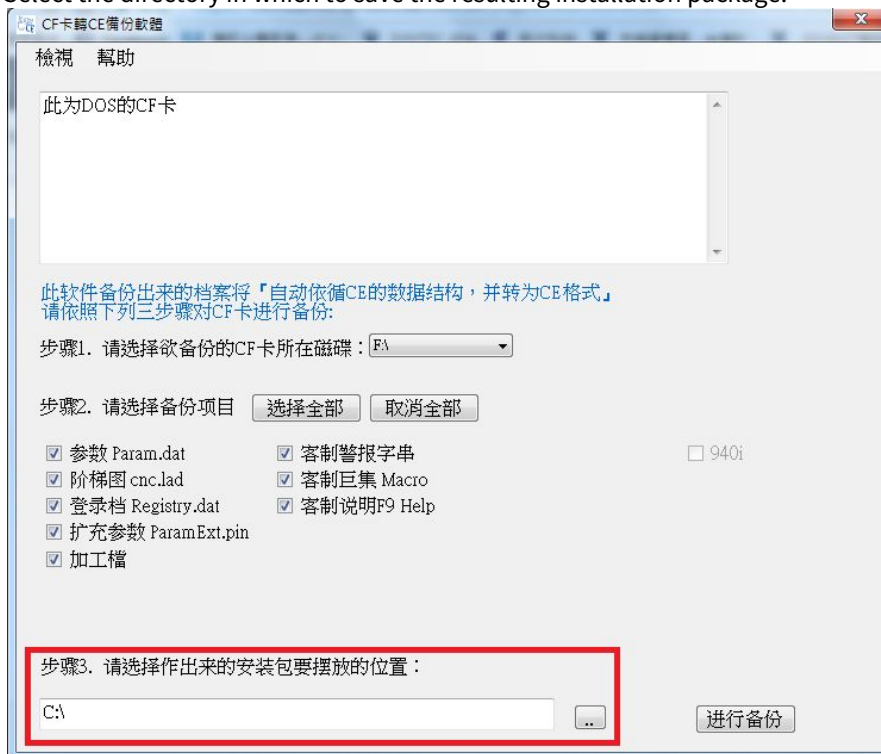


6. Options that cannot be backed up will turn into grayscale.



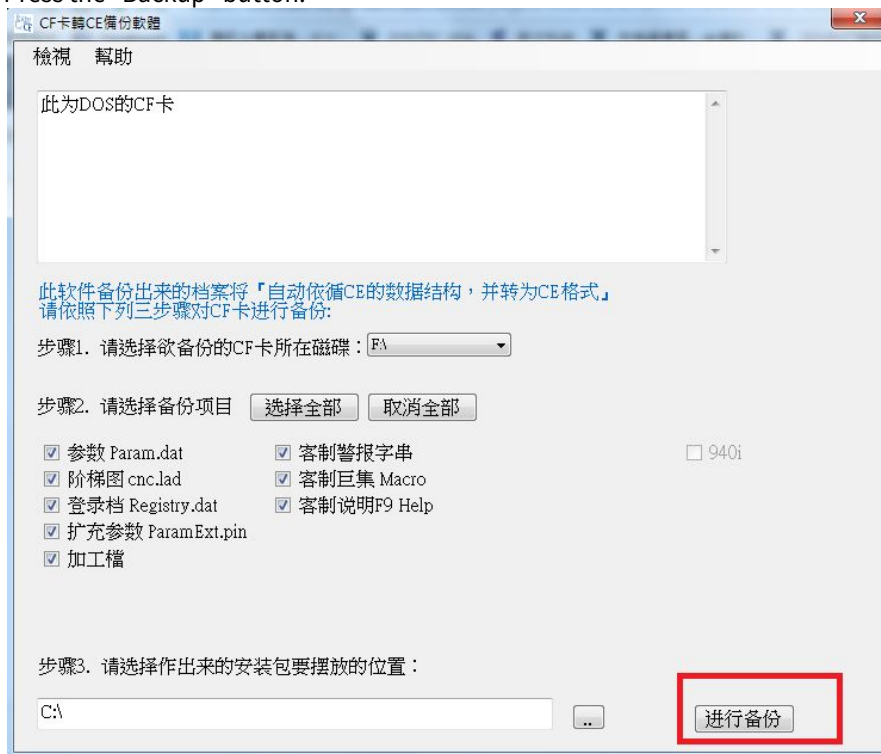
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7. Select the directory in which to save the resulting installation package.



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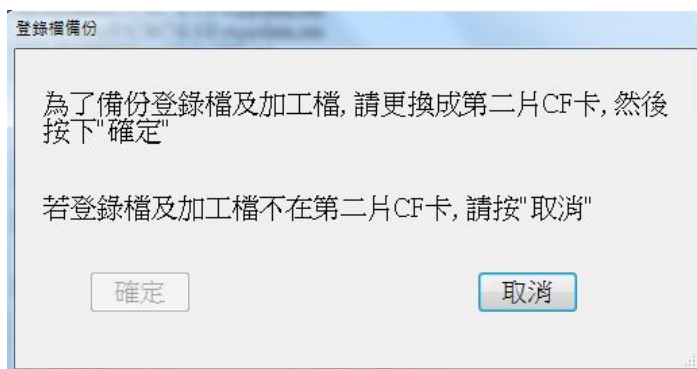
8. Press the "Backup" button.



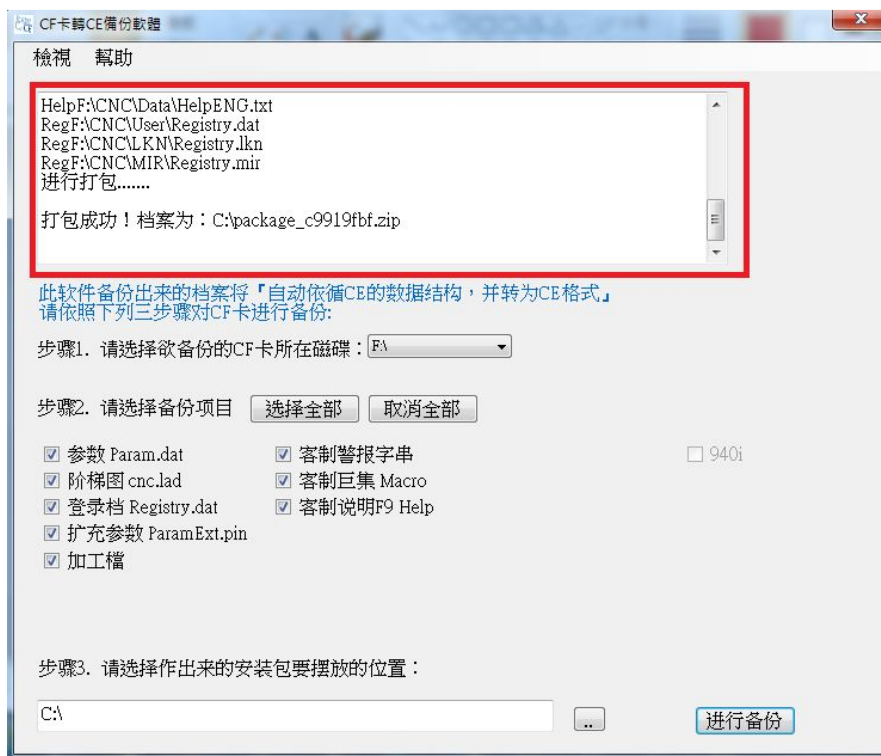
If the **registry** is checked, the **profile** will pop up with the following prompt to insert a second CF card for backup.

The prompt window will automatically detect the insertion of the CF card and an **OK** button will appear for the user to confirm.

If the file is not on the second CF card, then click Cancel to back up the first CF card.



LOG screen will show the current packing progress and results.



9. Then, take the installation package to the controller to install the software.

package_972f8071.zip 2014/2/18 上午 10:14 WinRAR ZIP 壓縮檔 65 KB

10.2 x86-CF card backup

This software can also be used to back up the CF card contents of x86 systems. The procedure is the same as for DOS to x86, and a zip file will be generated at the end of the process for the controller to install.

10.3 DOS to x86 Backup

步骤2. 请选择备份项目

选择全部

取消全部

- ☒ 参数 Param.dat ☒ 客制警报字串
☒ 阶梯图 cnc.lad ☒ 客制巨集 Macro
☒ 登录档 Registry.dat ☒ 客制说明F9 Help
☒ 扩充参数 ParamExt.pin
☒ 加工檔

Item	DOS file name, position	x86 file name, position
Parameter	CNC\APP\param.dat	OpenCNC\Data\param.dat
Ladder	CNC\APP\cnc.lad	OpenCNC\Ladder\cnc.lad
Extended Parameter	CNC\Data\ParamExt.pxt	Merge pxt and pin files into a single file(The pxt file content has higher priority)
	CNC\Data\ParamExt.pin	OpenCNC\Res\ParamExt.pxt
	CNC\Data\ParamChiExt.pxt	Merge pxt and pin files into a single file(The pxt file content has higher priority), and not included in the installation package.
	CNC\Data\ParamChiExt.pin	ParamExt\ParamChiExt.pxt
	CNC\Data\ParamEngExt.pxt	Merge pxt and pin files into a single file(The pxt file content has higher priority), and not included in the installation package.
	CNC\Data\ParamEngExt.pin	ParamExt\ParamEngExt.pxt
	The .pxt of [OpenCnc\Country\0] in MMIBase.ini	OCRes\Common\String\ParamExt_COM.xml
	The .pxt of [OpenCnc\Country\1] in MMIBase.ini	OCRes\CHT\String\ParamExt_CHT.xml

	The .pxt of [OpenCnc\Country\2] in MMIBase.ini	OCRes\CHS\String\ParamExt_CHS.xml
	The .pxt of [OpenCnc\Country\3] in MMIBase.ini	No conversion to xml
Customize d alert string	CNC\APP\appchi.str	OCRes\CHT\String\AlarmPLC_CHT.xml OCRes\CHS\String\AlarmPLC_CHS.xml
	CNC\APP\appeng.str	OCRes\Common\String\AlarmPLC_COM.xml
	CNC\EXE\Appdata.res 的CNCCHI.STR	OCRes\CHT\String\AlarmMacro_CHT.xml OCRes\CHT\String\AlarmMacro_CHS.xml
	CNC\EXE\Appdata.res 的CNCENG.STR	OCRes\CHT\String\AlarmMacro_COM
Customize d MACRO	CNC\MACRO	OpenCNC\Macro
Customize d description	CNC\Data\HelpCHI.txt	OCRes\CHT\Help\HelpPLCAalarm.htm OCRes\CHS\Help\HelpPLCAalarm.htm
	CNC\Data\HelpENG.txt	OCRes\Common\Help\HelpPLCAalarm.htm
Profile	CNC\Ncfiles\	(Pr3219)\OpenCnc\Ncfiles\
Registry	CNC\User\Registry.dat	(Pr3219)\OpenCNC\User\Registry.dat
	CNC\LKN\Registry.lkn	(Pr3219)\OpenCNC\LKN\Registry.lkn
	CNC\MIR\Registry.mir	(Pr3219)\OpenCNC\MIR\Registry.mir

Note:

1. Customized alert string : The format must adhere to the specifications; otherwise, the alarm string will fail to convert.
 - Content format: **24xxx="1;MSG=Alarm content"**

2. Profile:Pr3219=(0 → DiskA, 1→ No backup, 2→ DiskA, 3→ DiskA)
3. Registry: Pr3219=(0 → DiskA, 1→ No backup, 2→ No backup, 3→ DiskA)

10.4 Compatibility

Item	Description
Parameter	When the DOS parameter Pr3209 is set to 3 (Dos Simplified), the tool will process the compatibility and convert it to 119 (CE Simplified) to maintain the system with the same language.
	The DOS parameter Pr3219 is always converted to 3 (DiskA) by the tool to match the system configuration of Arm.

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10.5 Notifications

- Bootcepc is **not included in the generated installation package**, please refer to step 5 to update it.
- The boot screen must match the screen resolution in length and width when updating. If it is not possible to perform the installation, please **recreate the boot image file**.
 - Reference: Update Boot Image File
 - File size:
 - 800x600: 1.37MB **(1,440,054 bytes)**
 - 1024x768: 2.25MB **(2,359,350 bytes)**
- Please make sure the PC can read the file normally through the file manager after inserting the CF card.
- Please note that the following items **cannot be backed up**:
 - **Prospective System Interface(PrdMMIRes)**
 - Please backup manually first because of the version compatibility issue that no backup will be performed during the process.
 - Currently, only manual modification of interface and fenubar can be done through EHMI and other tools.
 - **IP Settings**
 - Backup restore is not available, please redo the settings.
 - Reference: Dipole Setting Manual.

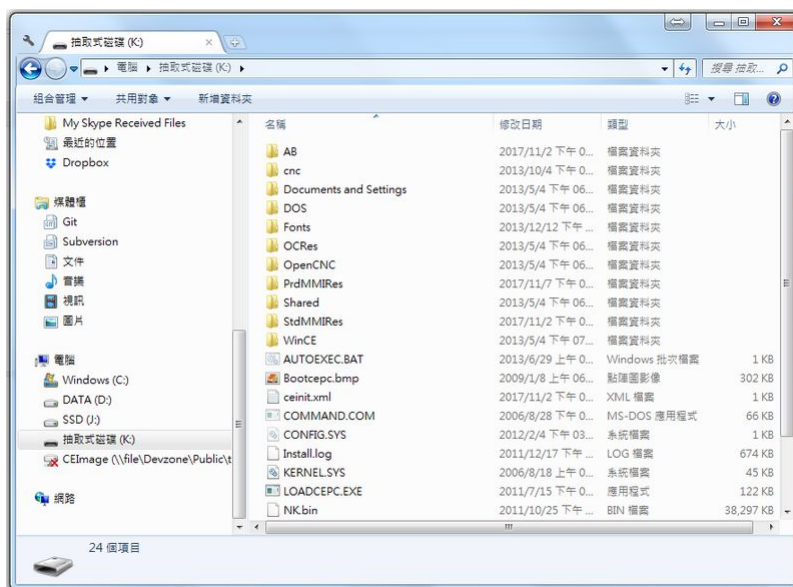
- **Font File**

- Currently, there is no font file backup function available, if there is any need, please contact SYNTEC technical center.

10.6 Operation Method

STEP 1

- Insert CF1 (DiskC) first. And insert CF2 (DiskA) in step 5 if Pr3219 is set to 3.

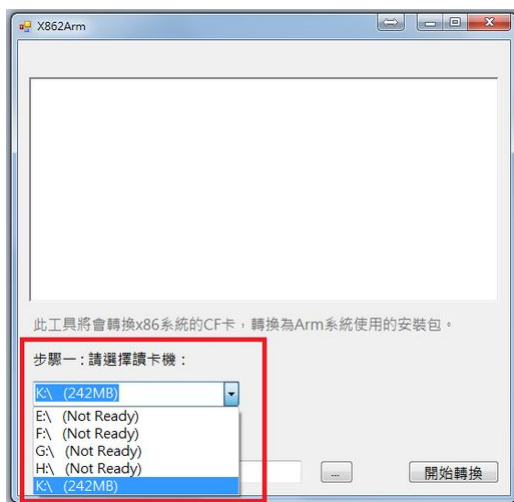


STEP 2

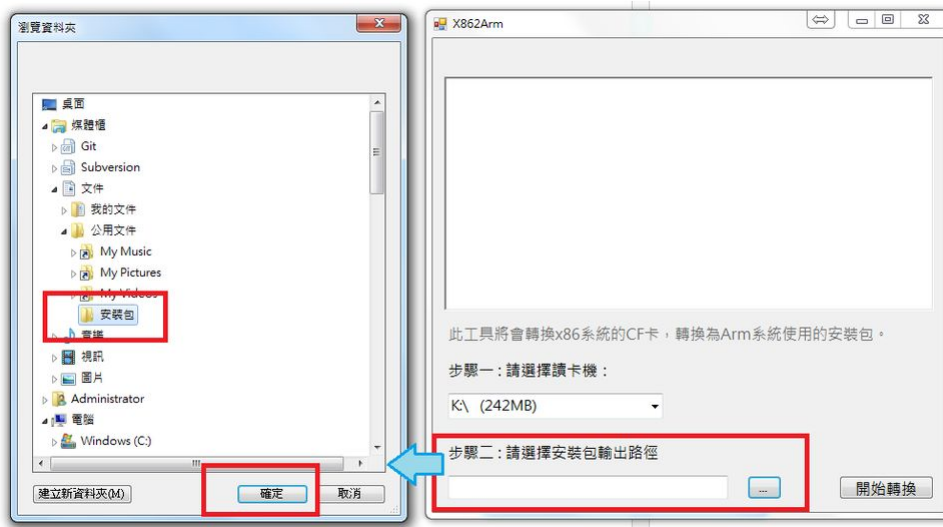
- Turn on and select the conversion from x86 to ARM.

**STEP 3**

- Selecting a card reader.
- The list will show **all removable devices**.
- The **capacity** and **status** of the current device will be displayed in the back for identification.

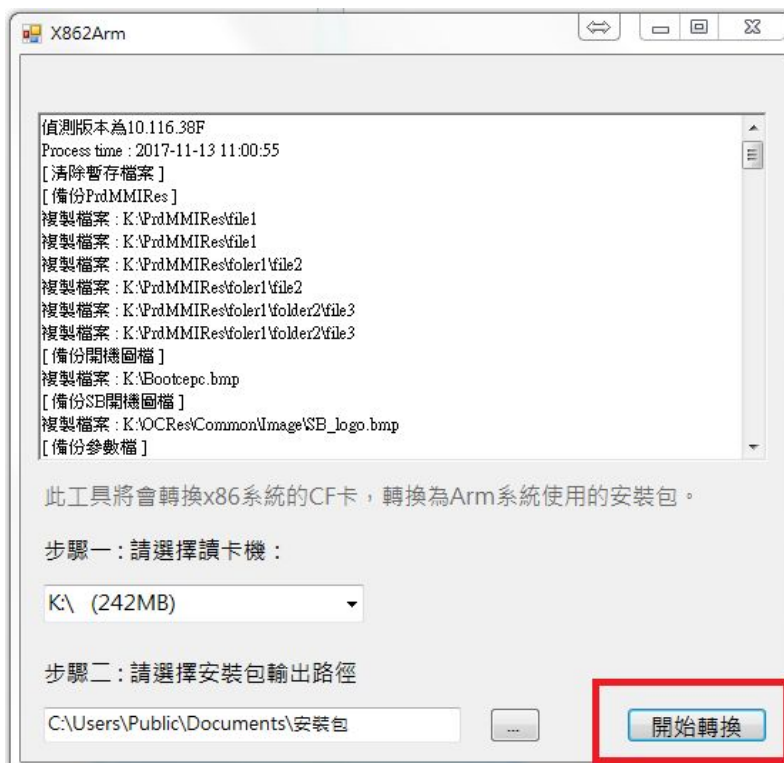
**STEP 4**

- Select the output folder of the installation package.
- Press to start the conversion.



STEP 5

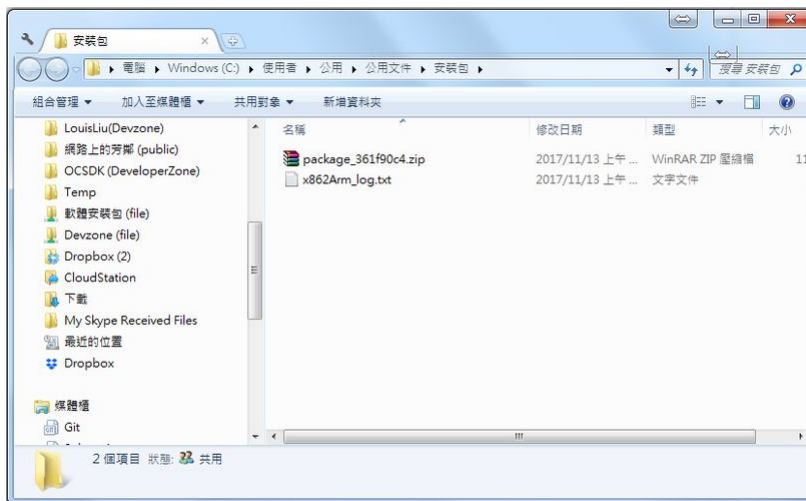
- The current status of the execution is displayed above once the conversion starts.



- When the tool reads that **Pr3219** is **3**, it will prompt the user to insert CF2 (DiskA).

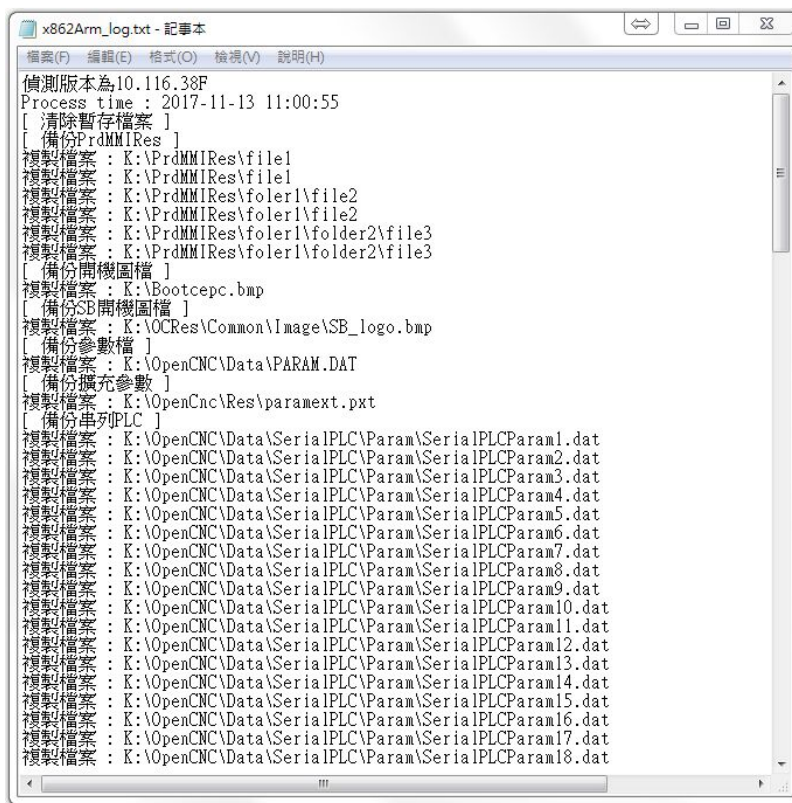


- After the tool is executed, the **file manager** will be opened and the current output of the installation package will be displayed.

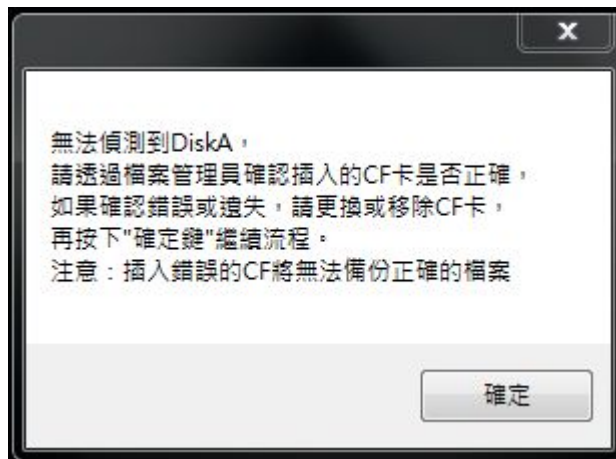


- A **log** file will be generated at the same time next to the installation file.

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- If the window is displayed, please check if the CF card is inserted correctly through the Windows file browser.



STEP 6

- If necessary, the boot image file can be restored manually.

- The detailed operation can be found in the following documents.
 - Update Boot Image File
- File location:
 - Under the selected output folder, there will be a boot image file of bootcepc.bmp.
- The boot screen must match the screen resolution in length and width when updating. If it is not possible to perform the installation, please **recreate the boot image file**.
 - Reference: Update Boot Image File
- Confirm the file size:
 - 800x600: 1.37MB **(1,440,054 Bytes)**
 - 1024x768: 2.25MB **(2,359,350 Bytes)**

STEP 7

- Perform the software installation.
- For detailed operation, please refer to the following documents.
 - Software Installation
- File Location:
 - Under the selected output folder, there will be a package_xxx.zip archive.

10.7 x86 to ARM Backup

Item	File Address	Remark
SB Boot Image	• \DiskC\OCRes\Common\Image\SB_logo.bmp	
Parameter	• \DiskC\OpenCNC\Data\PARAM.DAT	
Extended Parameter	• \DiskC\OpenCnc\Res\paramext.pxt	
Extended Parameter Multilingual String	• \DiskC\OCRes\Common\String\ParamExt_COM.xml • \DiskC\OCRes\CHT\String\ParamExt_CHT.xml • \DiskC\OCRes\CHS\String\ParamExt_CHS.xml	Valid Version: 1.3.1
Extended Parameter Bit Multilingual String	• \DiskC\OCRes\Common\String\ParamExt_Rbit_COM.xml • \DiskC\OCRes\CHT\String\ParamExt_Rbit_CHT.xml • \DiskC\OCRes\CHS\String\ParamExt_Rbit_CHS.xml	Valid Version: 1.3.1

Item	File Address	Remark
Serial PLC-axis Parameter	• \DiskC\OpenCNC\Data\SerialPLC\Param\SerialPLCParam[1-32].dat	
Serial PLC-axis Registry	• \DiskC\OpenCNC\Data\SerialPLC\Registry\SerialPLCReg[1-32].dat	
ROT Turret Parameter	• \DiskC\OpenCNC\Data\RotParam.dat	
ROT Turret Registry	• \DiskC\OpenCNC\Data\RotReg.dat	
Ladder	• \DiskC\OpenCNC\Ladder\CNC.LAD	
PLC Alarm Multilingual String	• \DiskC\OCRes\Common\String\AlarmPLC_COM.xml • \DiskC\OCRes\CHT\String\AlarmPLC_CHT.xml • \DiskC\OCRes\CHS\String\AlarmPLC_CHS.xml	
Macro	• \DiskC\OpenCnc\MACRO*	
Macro Alarm Multilingual String	• \DiskC\OCRes\Common\String\AlarmMacro_COM.xml • \DiskC\OCRes\CHT\String\AlarmMacro_CHT.xml • \DiskC\OCRes\CHS\String\AlarmMacro_CHS.xml	
OnlineHelp	• \DiskC\OCRes\Lang\Help*.htm • \DiskC\OCRes\Lang\Help*.help	
Dipole Client Settings	• \DiskC\StdMMIRes\Common\DipoleSettings.xml	
Dipole Server Settings	• \DiskC\Shared\donet\DipoleSettings.xml	
Network Folder Settings	• \DiskC\OCRes\Common\ConfigInfo.xml	
Maker Information	• \DiskC\OpenCNC\Data\MakerConfigInfo.xml	
IO Mapping	• \DiskC\OpenCNC\Data\IoMap_Customer.xml	

Item	File Address	Remark
Authority Data	• \DiskC\OpenCNC\Data\Autho.xml	
Profile	• (Pr3219)\OpenCNC\Ncfiles\profile • (Pr3219)\OpenCNC\Ncfiles\profile	
Registry	• (Pr3219)\OpenCNC\User\Registry.dat • (Pr3219)\OpenCNC\User\Registry.dat	
Gncfile	• (Pr3219)\OpenCNC\GNcfiles*. *	
XMLDB Schema	• OCRes\Common\Schema*. *	
Tool Length Data	• Before(include) 10.116.24Q, 10.116.34, 10.117.34: (Pr3219)\OpenCNC\User\ToolTable.dat • After(include) 10.116.24R, 10.116.35, 10.117.35: (Pr3219)\SysData\CNC\ToolTable.dat	
M Code Grouping Settings	• Before(include) 10.116.24Q, 10.116.34, 10.117.34: (Pr3219)\OpenCNC\User\ScanTable.dat • After(include) 10.116.24R, 10.116.35, 10.117.35: (Pr3219)\SysData\CNC\ScanTable.dat	
MMI Config	• \DiskC\OCRes\Common\MMIConfig_Customer.xml	
Bootcepc	• \DiskC\Bootcepc.bmp • Must do a bootcepc renew when bootup.	
Prospective System Interface(PrdMMIRes) (No backup)	• \DiskC\PrdMMIRes* • Currently, Fenu has a style conflict between x86 and Arm, so no backup is performed.	
IP Settings (No backup)	• Registry • This information is stored in the system registry and is not available when the system is not powered on through the CF card.	

Item	File Address	Remark
Font File (No backup)	• \DiskC\Fonts* • Registry • The font file settings are also stored in the system registry, which cannot be accessed when the system is not powered on through the CF card.	

Note : Pr3219 = (0→ No backup, 1→No backup, 2→DiskA, 3→DiskA, 4→No backup)

10.8 Compatibility

Item	Description
Parameter	If the x86 system parameter Pr3219 is 0, 1, or 2, it is always converted to 3 (DiskA) by the tool to conform to the ARM system configuration.

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[CEToLinux](#)

This tool does not support CE to Linux related conversions.

Please refer to the CE to Linux related functionalities for CE to Linux related functionalities.

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11 AutoUpgrade Guidance

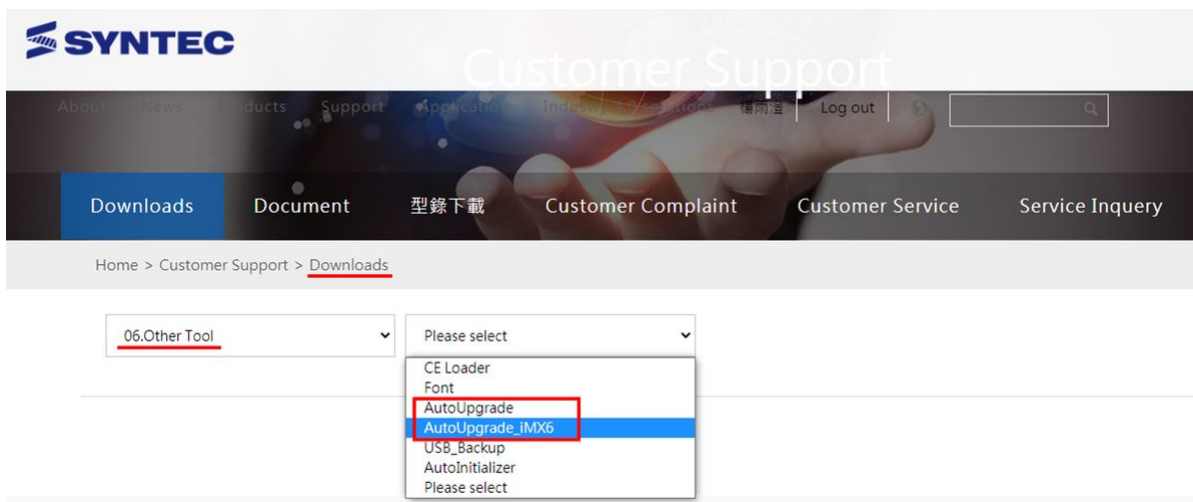
11.1 AutoUpgrade Guidance

According to different situations, there are two AutoUpgrade tools currently. The differences between two tools are below.

Tool name	AutoUpgrade	AutoUpgrade_iMX6
Version rules	2.x	3.x
Applicable models	Mainboard is 35x Mainboard is 335x	Mainboard is i.MX6
Using time	When problems are caused by DiskA malfunction, use this tool to perform hardware reforming.	If the image file version is before 9.16 (included), it easily causes lag for human machine or all-in-one driver occasionally send out the MOT-11 alarm, Upgrade version 9.17 to solve it.
Image file version	35x: 7.21 335x: 7.59	9.17
Software version	10.116.24Z	10.116.56K
Link to Operation Manual	AutoUpgrade Manual	AutoUpgrade_iMX6 Manual

Official website download path: Customer Support > Downloads > Other Tool > AU or AU_iMX6

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11.2 AutoUpgrade_iMX6 Manual

- [Introduction](#)
- [Precautions](#)
- [Instructions](#)
 - [Steps](#)
 - [Confirmation](#)
- [Troubleshooting](#)

11.2.1 Introduction

This tool is for models with motherboard i.MX6 to install image files and software which the target versions are 9.17 and 10.116.56K respectively.

When to use:

If the image file version is before 9.16 (included), it is often that the HMI freezes or the all-in-one drive occasionally triggers the alarm MOT-11. Upgrading to 9.17 can solve the problem, and compared with installing an image file on the HMI, this tool can ensure a higher completion rate.

11.2.2 Precautions

- This tool is only applicable to models with motherboard i.MX6 and will not have any effect on models with other ones.
- Please make sure that the remaining space of the USB is greater than 1 G after inserting AutoUpgrade.
- Please pay attention to the prompts on the controller and remove the USB before the **first** reboot to avoid starting the installation process again at the next boot.

11.2.3 Instructions

Steps

1. Please log in to SYNTEC official website and download AutoUpgrade_iMX6 via the path: Customer Support> Downloads> Other Tool.

2. After decompressing the downloaded file AutoUpgrade_iMX6_{version number}.zip, put all the files in the USB root directory. (It is recommended that this USB is dedicated to AutoUpgrade, and stores AutoUpgrade related files only.)
3. Plug the USB into the controller.
4. Reboot the controller.
5. When the controller turns on, AutoUpgrade will be executed automatically.
6. After installation is completed, the controller will display "remove the USB and reboot". (First prompt)
7. After removing the USB, reboot the controller.
8. The controller will prompt to reboot for **the second times**. Reboot the controller again.
9. Continuing on point 8, **there is a certain probability that the controller will directly complete booting up, which means that the second prompt will not appear. Please note that you still have to reboot, no matter that it prompts or not.**
10. After successfully booting up, AutoUpgrade is completed.

Confirmation

1. Go to the "System Information" page and check whether the image file version is 9.17 and the software version is 10.116.56K.

11.2.4 Troubleshooting

- If AutoUpgrade is not executed, please check the following:
 - a. Please make sure that the decompressed file is placed in the "root directory" of the USB, not in any other folders. If the path is wrong, please move the file to the USB root directory and try again.
 - b. Please make sure that the controller motherboard is i.MX6. You may look up this information on the controller "System Information" page. If the motherboard model is not i.MX6, this tool is not applicable to this controller.
 - c. If all of the above are confirmed to be correct, please provide the log file for problem analysis.
 - Log file location: USB Disk/Backup/{controller serial number}/{controller serial number}.txt
 - E.g. E:\Backup\M7A0001\M7A0001.txt

11.3 AutoUpgrade Manual



Viewtracker - Read-only Mode

Viewtracker Data can not be displayed in Confluence Read-only Mode.

- [Preface](#)
- [Note](#)
- [Operation](#)
 - [Preparation](#)
 - [Steps](#)
 - [Confirmation](#)
- [Troubleshoot](#)

11.3.1 Preface

The purpose of this tool is to perform hardware reforming (update the image file) when DiskA encounters a problem. During the process, it will automatically back up the system files and restore the files after the reforming.

11.3.2 Note

- For the complete AutoUpgrade process, the controller needs to be restarted at least three times. Therefore, if an abnormal thing occurs after the execution of AutoUpgrade, such as a panel malfunction, please restart the controller several times to restore the function.
- After executing AutoUpgrade, a folder with the same name as the serial number of the controller will be generated in the backup folder of the USB, and there is a txt file (Log file) with the same name as the serial number of the controller.
 - If AutoUpgrade has not completed normally, [please provide this txt file](#) so that the technology center can analyze the problem.
- If the image file version is older than 7.21 / 7.42, user can only use AutoUpgrade to upgrade the image file, **do not use the controller human-machine to upgrade.**
- After upgrading the image file with AutoUpgrade, **please do not degrade to the older version.**
- By default, AutoUpgrade only supports 6/11/21/21-H/eHMC series controllers. If there's need for other models, please refer to the steps below.
 - Please download the installation package of the required model and unzip it, remove the software version number, and put it in the Setup folder. For example, change 60CPrintCE7_ARM from 60PrintCE7_ARM_10.116.54T.
- Please use AutoUpgrade when **the controller can boot normally.**
- After AutoUpgrade is completed, [it is recommended to reload all processing files](#) to avoid using the damaged processing files, which may cause the risk of collision.

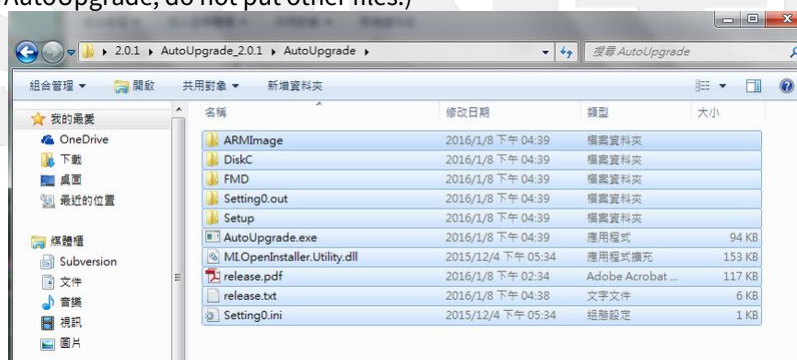
11.3.3 Operation

Preparation

- Please make sure that the remaining space of the USB is greater than 1G after inserting AutoUpgrade.
- AutoUpgrade only supports the controller software [version 10.116.x or after](#). If the original version is 10.114.x, please manually upgrade to version at least 10.116.x before using the AutoUpgrade.
- If the controller cannot boot normally, please try to repair it (for example, format DiskA first), and then use AutoUpgrade. If it cannot be repaired, please send it for repair directly.
- If the OP-022 or OP-003 alarm has appeared on the controller, please try to back up the important files (login files and processing files) in DiskA first, then enter SA to format DiskA, and then use AutoUpgrade. .
- In addition, if the backup cannot be completed, please format DiskA directly, and then use AutoUpgrade.

Steps

- Go to Syntec official website and download the latest version of AutoUpgrade. (Classified as "Other Tool")
- Unzip the file and put all files in the USB root directory. (It is recommended that this USB dedicates only for AutoUpgrade, do not put other files.)

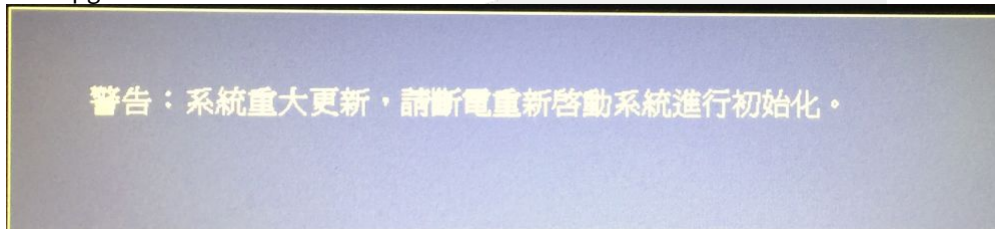


- Plug the USB into the controller.

4. Reboot and start the AutoUpgrade process.
5. A reboot prompt appears and the controller reboots for the first time. (Refer to the picture below)



6. While booting up next time, whether a reboot prompt appears (refer to the figure below), or it has successfully entered the HMI, **user must reboot for the second time** to ensure the complete execution of AutoUpgrade.



7. The auto upgrade is completed.

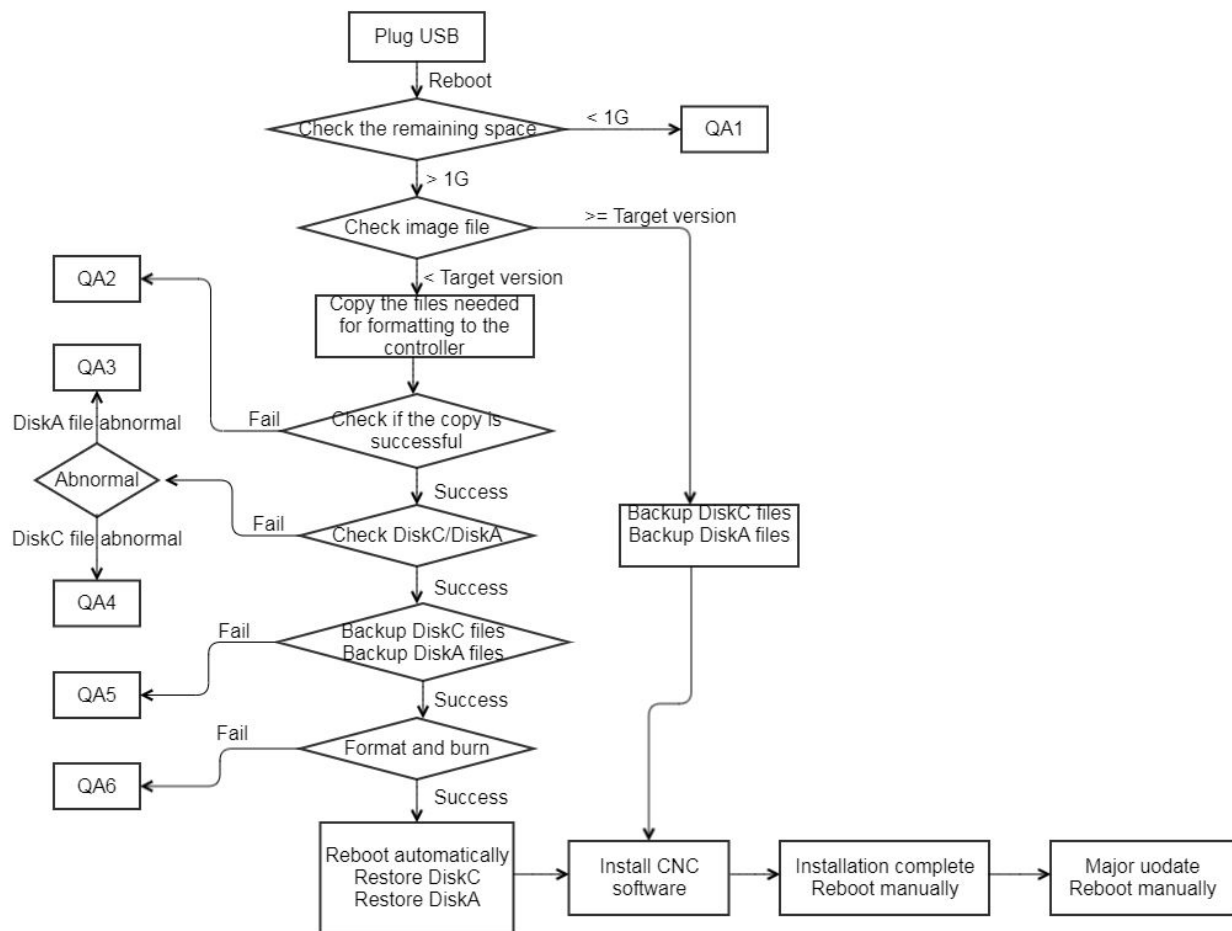
Confirmation

1. After the upgrade is completed, go to the system information screen and confirm that the controller software version and image file version are correct.
 - a. Image file version: 7.21 / 7.59
 - b. Software version: Built-in version is 10.116.24Z, if the initial version is later than this version, no software upgrade will be needed.
 - i. If there are other versions, please confirm by yourself.
2. If user wants to confirm the execution result of AutoUpgrade, you can open the log file (*.txt file) with the same name as the controller serial number in the backup folder, and drag it to the bottom to confirm whether there is a string in the figure below. If it does, it means the upgrade is successful.


```
Copy \UsbDisk\Backup\M1G5342\DiskA\OpenCNC\User\Tmp\DiskC\OCRes\Common\String\AlarmMacro_COM.Xml
Copy \UsbDisk\Backup\M1G5342\DiskA\OpenCNC\User\Tmp\DiskC\OCRes\Common\String\AlarmPLC_COM.Xml
Copy \UsbDisk\Backup\M1G5342\DiskA\OpenCNC\User\Tmp\DiskC\OCRes\Common\String\ParamExt_COM.Xml
Copy \UsbDisk\Backup\M1G5342\DiskA\OpenCNC\User\Tmp\DiskC\OCRes\Common\String\ParamExt_RBit_COM.xml
Copy \UsbDisk\Backup\M1G5342\DiskA\AB\M1G5342_20160203_AB_2A286109.zip
Copy \UsbDisk\Backup\M1G5342\DiskA\AB\M1G5342_20160203_AB_OCRes_D5F449FF.zip
DiskA Restore \UsbDisk\Backup\M1G5342
Lowlevel format copy all restore files success!
Cnc version upgrade ...
Install Cnc software file : \USBDisk\Setup\21AM11CE7_ARM\package_944ea51b.zip
Before reboot, please remove USB. Otherwise, it will reinstall.
```
3. After AutoUpgrade is completed, if the OP-022 or OP-003 alarm still appears afterwards, it means that the hardware is seriously damaged. Please replace the controller directly.

11.3.4 Troubleshoot

The following figure shows the operation of AutoUpgrade. Please refer to the flowchart and the following QA while handling your problems.

**QA1:****Problem:**

- The screen shows that **the remaining space of the USB Disk is less than 1G, please replace the USB Disk and reboot**

Solution:

- Please replace a USB with a free space greater than 1G, and then execute again.

QA2:**Problem:**

- The screen shows that **insufficient files required for low-level formatting, please replace the USB Disk and run again**

Solution:

- Check whether all files of AutoUpgrade have been put into the USB, and then run it again.
- Replacing the USB then execute it again.

QA3:

Problem:

- The screen shows that **DiskA file system read failure. This is a serious error. Please format DiskA manually before executing AutoUpgrade**

Solution:

- Please try to manually back up important files in DiskA, such as login files, processing files, etc. If some files cannot even be backed up manually, it means that the file is damaged and user can give up the backup.
- After the manual backup is completed, please enter the SA to format DiskA, and then execute AutoUpgrade again.
- Continuing, if the version is too old, SA does not provide formatting function. Please refer to Handling of abnormalities in ARM second sector, ask for the USB formatting password from Syntec Taiwan Technology Center.

QA4:

Problem:

- The screen shows that **DiskC file system read failure, this is a serious error, please stop executing AutoUpgrade.**

Solution:

- Please manually install the controller software version (the same version or a later one), and execute AutoUpgrade again after installation.
- After completing the previous step, if the same situation still occurs, it means that AutoUpgrade cannot be executed on this controller.
- If the controller can still operate normally, please evaluate the on-site conditions to see whether to use it continuously or to replace the controller.

QA5:

Problem:

- The screen shows that **the drive file backup is incomplete, please check the update record and re-run AutoUpgrade after troubleshooting** (the screen text is still based on the system).

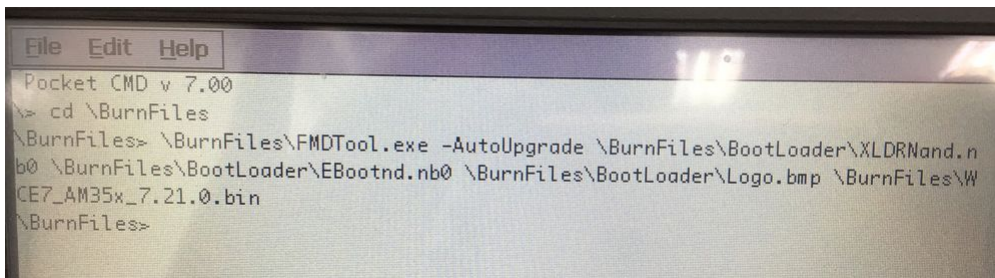
Solution:

- Please find the backup folder in the USB, there is a folder with the same name as the serial number of the controller, and there is a txt file with the same name as the serial number of the controller in this folder.
- Open the txt file and drag it directly to the bottom to check which file failed to back up.
- If the backup of the parameter, PLC, or login file fails, please confirm whether there is a previous backup file that can be restored, or try to directly export the file from the controller and then import it.
- If the file that failed to backup is at the core system file level, please refer to the Q4 solution.

QA6:

Problem:

- The following picture appears.



Solution:

- Please reboot. If the controller continues to perform AutoUpgrade after rebooting, just wait for AutoUpgrade to complete.
- If it is stuck on the Syntec Logo screen after rebooting, it means that the reforming has failed. Please replace the controller.

Others

- If user encounters booting problem during the AutoUpgrade process, please try the following steps first: **power off> plug and unplug the USB> reboot**. If this action works, it means that the cause of the problem is USB read failure, and can continue to execute AutoUpgrade at this time.

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12 Open Actions List

The following table lists the actions that can be openly used

Because the old action cannot directly determine whether it is open to use from the name itself, and checking the table is very inconvenient.

Therefore, since 10.118.11, actions that are not open externally will all start with "\$\$" as the identification.

Only the actions do not starting with \$\$ have to check this table for confirmation.

※ Note: After the PopupAlarm window pops up, most actions will be restricted. You need to close the PopupAlarm window before executing an action.

12.1 Action without argument

The arguments of this type of action will become part of the action name, so you can check the arguments in the action list.

For example, "Switch to CustomXml", if the target XML name is ABC.xml, then the action name will be CUSTOMXML_Abc.xml.

Action name	Example	Description	Restriction	Supported version
CUSTOMACT_EXEC_???	CUSTOMACT_EXEC_HMI This example will call HMI.exe	call execution file(exe) The path of the execution file (exe) is stored in DiskC\Shared\dotnet		

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Action name	Example	Description	Restriction	Supported version
CUSTOMACT_ASSIGN_MAIN=???	CUSTOMACT_ASSIGN_MAIN=Mickey.ncC	specify profile	This Action does not support loading machining programs located in the Macro folder Version 10.116.26D, 10.116.36P a. before, only the first axis group main program will be specified, b. after, the main program will be specified according to the number of axis groups been opened. Version : 10.118.60M, 10.118.66G, 10.118.70A, 10.118.71 If the file name is Chinese :	

Action name	Example	Description	Restriction	Supported version
CUSTOMACT_ASSIGN_MAIN_STORAGE=???	CUSTOMACT_ASSIGN_MAIN_STORAGE=L4070	Specify a string stored in the storage and assign it as the main program file name	- the value of device must be encoded with ANSI before 10.118.88 B, 10.120.18 B, 10.120.32 I, 10.120.41, 12.0.2 - the value of device must be encoded with UTF-8 after 10.118.88 B, 10.120.18 B, 10.120.32 I, 10.120.41, 12.0.2	10.1 16.6 E, 10.1 16.9, 10.1 17.9
CUSTOMDEV_?=??	CUSTOMDEV_R5998=10	specify how much the device is equal to	for R/P/@/#/L, only supports integer values.	
CUSTOMDEV_?++	CUSTOMDEV_R5998++	specify the device value to plus 1	for R/P/@/#/L	
CUSTOMDEV_?--	CUSTOMDEV_R5998--	specify the device value to minus 1	for R/P/@/#/L	

Action name	Example	Description	Restriction	Supported version
CUSTOMDEV_ADD_AX+Y CUSTOMDEV_MINUS_A X-Y	CUSTOMDEV_ADD_R100+3 The effect of use is: R100=R100+3	add and subtract integers to variables where A is a variable, X and Y are positive integers	for R/P/@/#/L	10.1 16.2 4U, 10.1 16.3 6A, 10.1 16.3 7, 10.1 17.3 7
CUSTOMDEV_BLU ??	CUSTOMDEV_BLU @12345	convert the integer value stored in the storage to the corresponding value with a decimal point according to the value set by the precision control	for @ only	10.1 16.5, 10.1 17.5 (1st) , 10.1 16.6, 10.1 17.6 (2nd))
CUSTOMDEV_ON ??	CUSTOMDEV_ON R200.1		for R/P/@/#/L	
CUSTOMDEV_OFF ??	CUSTOMDEV_OFF R200.1		for R/P/@/#/L	
CUSTOMDEV_INV ??	CUSTOMDEV_INV R200.1		for R/P/@/#/L	
CUSTOMDEVSTR_??=??	CUSTOMDEVSTR_R1000=ABC		for R/P/@/#/L	10.1 16.3, 10.1 17.3

Action name	Example	Description	Restriction	Supported version
CUSTOMSIP_CUSTOM_KEYPAD_ON		display Syntec keyboard Note: The original name of this action is "open the system small keyboard".	- The parameter Pr3251 must be set to a touch screen, such as 1 or 2. (For details, please refer to Pr3251 *Touch (screen)) - Version 10.120.16 O, 10.120.24 D, 10.120.28 A, 10.120.29 (inclusive) support setting EnableKeyboard in MMISetting to enable the keyboard (For details, please refer to Keyboard Customization Manual)	Before 10.16.36l, 10.16.42, 10.17.42 versions: Display Window numeric keypad. After 10.16.36l, 10.16.42, 10.17.42 (inclusive) versions: Display Syntec keyboard.

Action name	Example	Description	Restriction	Supported version
CUSTOMSIP_CUSTOM_KEYPAD_LG_ON		display Windows keyboard Note: The original name of this action is "open the system large keyboard".		10.1 16.4, 10.1 17.4
CUSTOMSIP_CUSTOM_KEYPAD_OFF		hide Syntec keyboard / Windows keyboard		
CUSTOMFENU_??	<action>CUSTOMFENU_Abc</action> Abc: Fenu Name to be switched	switch the FENU	Fenu Name must be consistent	
CUSTOMXML_??	<action>CUSTOMXML_Abc.xml</action> Abc.xml: The browser to be switched	switch the screen	It is strongly recommended that the upper and lower case of the browser names must be consistent.	
CUSTOMPLUGIN_??	<action>CUSTOMPLUGIN_Abc</action> Abc: PlugIn name	switch to plugin	plugin must be defined in plugin.config file	

Action name	Example	Description	Restriction	Supported version
POPUPXML_??	<action>POPUPXML_Abc.xml_W=300_H=200_X=200_Y=200_T=0</action> <action>POPUPXML_Abc.xml_250_400</action> Abc.xml is the browser of pop-up window W: window width, H: window height, X, Y: window position, T: title display(0 means no display) default(W=400_H=400_X=192_Y=100_T=1) In the second format mode, 250 is the window width, 400 is window height, and the window position is the same as above	pop-up window	It is strongly recommended that the upper and lower case of the browser names must be consistent.	
DoExitPopupWithoutFenu	<action>DoExitPopupWithoutFenu</action>	close the pop-up window	Used to close the pop-up window called by POPUPXML_??	
FENUBTNATTR_??	FENUBTNATTR_GCodeDisplaySwitch. Enabled=true --> The string format is "FENUBTNATTR_{0}.{1}={2}", ButtonName, ButtonAttribute, ButtonAttrValue --> Program processing CustomApi.ChangeFenuBtnAttr(ButtonName, ButtonAttribute, ButtonAttrValue);	Modify the key attributes of Fenubar		

Action name	Example	Description	Restriction	Supported version
BACKGNDATTR_??	BACKGNDATTR_Lab_PendingAlarm.Visible=True --> The string format is "BACKGNDATTR_{0}.{1}={2}", ComponentName, ComponentAttr,ComponentAttrValue --> Program processing OCB_Backgnd.ComponentProperty["ComponentName.ComponentAttr"] = ComponentAttrValue;	Modify OCB_Backgnd object attributes		
CUSTOMATTR_??	--> The string format is "CUSTOMATTR_{0}.{1}={2}", CustomComponentName , CustomComponentAttribute, CustomComponentValue --> Program processing OCB_CustomXml.ComponentProperty[CustomComponentName + "." + CustomComponentAttribute] = CustomComponentValue;	Modify object attributes	Only works on custom pages (pages called by customxml_??)	
CUSTOMFILE_DIR_??		Modify the data base dir of XMLDB	dosen't support the version after 10.116.14, 10.117.15. ref: MMI-1113	
LOADCYCFILE_NAME=? ?	<action>LOADCYCFILE_NAME=Test</action> load in Test.cyc	LOADCYCFILE_NAME=FileName Load the setting file stored in FileName.cyc	According to the definition settings of CycleName= CustomXMLDBData which in the folder of ~/Common/Schema/	10.1 16.9, 10.1 17.9

Action name	Example	Description	Restriction	Supported version
LOADCYCFILE_STORAGE=??	<action>LOADCYCFILE_STORAGE=R50</action> If R50 = 1234, load 1234.cyc	LOADCYCFILE_STORAGE=Device Same as above, except that the file name is stored in Device, and Device currently only provides R in digital form	same as above	
SAVECYCFILE_NAME=? ?	<action>SAVECYCFILE_NAME=Test</action> Save the current setting file in Test.cyc	SAVECYCFILE_NAME=FileName will pop up the asking window "whether to save the settings in FileName.cyc" Choose Yes, according to the Schema definition, save the current settings in FileName.cyc Choose No, nothing will happen	same as LOADCYCFILE_NAME	
SAVECYCFILE_STORAGE=??	<action>SAVECYCFILE_STORAGE=R50</action> If R50 = 1234, save the setting in 1234.cyc	SAVECYCFILE_STORAGE=Device Same as above, but the file name refers to the value stored in Device	same as LOADCYCFILE_STORAGE	

Action name	Example	Description	Restriction	Supported version
KEYCODE_??	<action>KEYCODE_A</action> Trigger the "A" key of the keyboard	trigger the same key code	special characters: 1. semicolon(;): KEYCODE_SEMICOLON	
DOTOUCHADJUST	<action>DoTouchAdjust</action>	trigger touch screen calibration procedure	case must match exactly only valid in CE	
CUSTOMXML_CUSTOMFILESYSTEM		display file management screen (for cycle data)		
CUSTOMFILE_OPENFILE	LoadXMLDBFile	automatically load the selected XMLDB file in the file list (will save the current file, and then load)		
CUSTOMFILE_LOADFILE	CUSTOMFILE_LOADFILE, need to cooperate with defining "CustomXMLDBData"	load the data in the file where the file management cursor is located (will NOT save the current file, and directly load)		
CUSTOMFILE_SAVEFILE	CUSTOMFILE_SAVEFILE, need to cooperate with defining "CustomXMLDBData"	save the data currently in use to the file		

Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_SAVETO	CUSTOMFILE_SAVETO, need to cooperate with defining "CustomXMLDBData"	save the data currently in use to the file where the cursor is located		
CUSTOMFILE_SAVEAS	CUSTOMFILE_SAVEAS, need to cooperate with defining "CustomXMLDBData"	save the data currently in use to the newly entered file name		
CUSTOMFILE_COPYFILE	CUSTOMFILE_COPYFILE	copy the file where the file management cursor is located to another file		
CUSTOMFILE_DELFIL	CUSTOMFILE_DELFIL	delete the file where the file management cursor is located		
CUSTOMFILE_RENFILE	CUSTOMFILE_RENFILE	change the file name which the file management cursor located on to another file name		

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Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_IMPORTFILE	<action>CUSTOMFILE_IMPORTFILE</action>	pop up the import screen	in addition to the extension defined in MMIconfig.xml, the default extension *.cyc will be added	<after 10.1 16.3 6L, 10.1 16.4 3, 10.1 17.4 3 version (include) > display *.cyc file by default



Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_EXPORT FILE	<action>CUSTOMFILE_EXPORTFILE</ action>	pop up the export screen	in addition to the extension defined in MMIConfig.xml, the default extension *.cyc will be added	<after 10.1 16.3 6L, 10.1 16.4 3, 10.1 17.4 3 version (include) > display *.cyc file by default



Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_CYCLE1	<action>CUSTOMFILE_CYCLE1</action>	- Specify the existing CycleName as "CustomXMLDBData" - Specify the file storage location as "GNcFiles"	- suitable for using multiple sets of XMLDB cycleName, please specify the corresponding cycleName through action before opening/archiving cycle related files - The capitalization of CycleName must be consistent - Before it is specified, the system defaults CycleName is still CustomXMLDBData - The robot software occupies the first group of CYCLE by default. For robot custom developers, please start with the second group of CYCLE - CUSTOMTABLE_ related actions also switch the storage location	10.1 16.3 60, 10.1 16.4 5, 10.1 17.4 5 Function 2 and usage restrictions will be provided after the following versions (inclusive) 10.1 16.3 6S, 10.1 16.4 7, 10.1 17.4 7

Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_CYCLE2	<action>CUSTOMFILE_CYCLE2</action>	1. Specify the existing CycleName as "CustomXMLDBData2" 2. Specify the file storage location as "GncFiles\CYCLE2"	g. Please note that this custom Action will change the file location where the system reads XMLDB, such as DBOPEN/DBLOAD	
CUSTOMFILE_CYCLE3	<action>CUSTOMFILE_CYCLE3</action>	1. Specify the existing CycleName as "CustomXMLDBData3" 2. Specify the file storage location as "GncFiles\CYCLE3"		

Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_CYCLE4	<action>CUSTOMFILE_CYCLE4</action>	- Specify the existing CycleName as "CustomXMLD BData4" - Specify the file storage location as "GNcFiles\CYCLE4"		
CUSTOMFILE_CYCLE5	<action>CUSTOMFILE_CYCLE5</action>	- Specify the existing CycleName as "CustomXMLD BData5" - Specify the file storage location as "GNcFiles\CYCLE5"		
CUSTOMFILE_MULTISELECT=??	<action>CUSTOMFILE_MULTISELECT=TRUE</action> <action>CUSTOMFILE_MULTISELECT=FALSE</action>	True: Multiple selection False: radio selection		10.1 18.6 8, 10.1 18.6 6D, 10.1 18.6 0J
CUSTOMFILE_DELSELECTFILE	<action>CUSTOMFILE_DELSELECTFILE</action>	delete selected files		

Action name	Example	Description	Restriction	Supported version
CUSTOMFILE_SELECTALL	<action>CUSTOMFILE_SELECTALL</action>	select all		
CUSTOMFILE_CANCELSELECT	<action>CUSTOMFILE_CANCELSELECT</action>	cancel selection		
CUSTOMFILE_SELECTFILE	<action>CUSTOMFILE_SELECTFILE</action>	select		
DOI_E_EXIT		close the export and import screen		
CUSTOMFILE_NEWFILE	<action>CUSTOMFILE_NEWFILE</action>	the CycleData file adding window pops up		
CUSTOMFILE_NEWFILE_A=??,??	<action>CUSTOMFILE_NEWFILE_A=Action1,Action2...</action>	the CycleData file adding window pops up and able to execute Actions after successfully adding files		
CUSTOMTABLE_SAVEFILE	<action>CUSTOMTABLE_SAVEFILE</action>	Save file: Save the content of the currently opened customized table and the related field values set by XMLDB Schema.	The name of the currently opened file is recorded in L3980, and the maximum length is 80 characters.	10.1 17.2, 10.1 16.2

Action name	Example	Description	Restriction	Supported version
CUSTOMTABLE_LOADFILE	<action>CUSTOMTABLE_LOADFILE</action>	Load file: Load the selected data file on the file system page, including table content and related field values set by XMLDB Schema, and display the corresponding Page Schema.	The files managed by the file system are stored in GNcFiles or its subfolders under the disk designated by Pr3219, and the file extension type is .cyc.	
CUSTOMTABLE_RELOADFILE	<action>CUSTOMTABLE_RELOADFILE</action>	Reload file: reload the data file opened by the file system, including table content and related field values set by XMLDB Schema, and display the corresponding Page Schema.	same as above	
CUSTOMTABLE_APPENDLINE	<action>CUSTOMTABLE_APPENDLINE</action>	add row: add a row of Template column corresponding to xxx Schema after the table cursor.		
CUSTOMTABLE_INSERTLINE	<action>CUSTOMTABLE_INSERTLINE</action>	insert row: insert a row of Template column corresponding to xxx Schema after the table cursor.		

Action name	Example	Description	Restriction	Supported version
CUSTOMTABLE_DELETELINE	<action>CUSTOMTABLE_DELETELINE</action>	delete row: delete the row where the table cursor is located.		
CUSTOMTABLE_EDITMODE	<action>CUSTOMTABLE_EDITMODE</action>	edit mode: set the customized table to edit mode. At this time, each field can be focused and the input can be edited.		
CUSTOMTABLE_MONITORMODE	<action>CUSTOMTABLE_MONITORMODE</action>	monitor mode: set the customized table to monitor mode. At this time, the value of each field can only be viewed, and cannot be entered or focus.		
CUSTOMTABLE_BROWSERMODE	<action>CUSTOMTABLE_BROWSERMODE</action>	switch the custom page table to "browse mode". The fields on the form can be focused, but cannot be entered		10.1 16.5, 10.1 17.5 (1st), 10.1 16.6, 10.1 17.6 (2nd)

Action name	Example	Description	Restriction	Supported version
CUSTOMTABLE_NEWFILE=??	<action>CUSTOMTABLE_NEWFILE=xxx</action> add xxx.cyc	add CycleData		
CUSTOMTABLE_NEWFILE=_A=??,??	<action>CUSTOMTABLE_NEWFILE=xxx_A=Action1,Action2</action> add xxx.cyc, then execute Action1 and Action2 in sequence	add CycleData, and execute Action in sequence		
DoRunSimRefresh	<action>DoRunSimRefresh</action>	force the graphics simulation to redo again	Please pay attention to capitalization	10.1 16.0 R, 10.1 16.6, 10.1 17.6
SAVECYCLE=??	SAVECYCLE= <i>CycleName</i>	store the corresponding Storage data of the Schema corresponding to the specified CycleName in the header of currently opened cyc file (L3980)		10.1 16.5, 10.1 17.5 (1st) , 10.1 16.6, 10.1 17.6 (2nd))
LOADCYCLE=??	LOADCYCKE= <i>CycleName</i>	read the header of the currently opened cyc file (L3980) which meet the Storage data corresponding to the specified CycleName in the system		

Action name	Example	Description	Restriction	Supported version
PushAnchorScreen	<action>PushAnchorScreen</action>	Push the current page to the screen queue	Take screen as the unit, CustomXML customized pages cannot switch through this action. If the similar functions are required, please use the new screen template customization method instead.	10.1 18.3 9
PopAnchorScreen	<action>PopAnchorScreen</action>	Switch to the top screen of the screen queue	same as above	10.1 18.3 9
Dynamic table related actions				
CTNewFile	<action>CTNewFile</action>	Create a new table file When triggered, it will pop up the dialog window for the user to customize the file name		10.1 16.5 4K, 10.1 18.0 F, 10.1 18.6

Action name	Example	Description	Restriction	Supported version
CTLoadFile	<action>CTLoadFile</action>	Load the table file Load file name: Defined in the table variable "File name variable" Notice Conditions for uploading files using the file management screen 1. The file name storage device used by CycleTable, need to be the same as the file management screen L39XX corresponding to the file management screen	file name variable applicable R/@/ L	

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Action name	Example	Description	Restriction	Supported version
		Open the CYCLEX folder on the file management screen, and the correspondence between the file name storage device L39XX If CYCLEX 1 is turned on, the user selects		

Action name	Example	Description	Restriction	Supported version
		the storagedevice L3980 corrects position during the file name If CYC		

Action name	Example	Description	Restriction	Supported version
		LE2 is the user selects the storage device L3960co		

Action name	Example	Description	Restriction	Supported version
		respon ding to the file name • ... • If CYCLE 5 is turned on, the users		

Action name	Example	Description	Restriction	Supported version
		electrostatic history storage aged device L3900 correction ponding to the file name		

Action name	Example	Description	Restriction	Supported version
		2. Need to operate during the file management screen is opening The CTLoadFile issued only at this time can load the file selected in the file management screen In other cases, the issued CTLoadFile will directly load the file according to the "file name variable"		
CTSaveFile	<action>CTSaveFile</action>	Save table content in data file	file name variable applicable R/@/ L	
CTInsertFocusLine	<action>CTInsertFocusLine</action>	Insert a new data in the focused line	focus line number variable applicable R/@	
CTInsertLine	<action>CTInsertLine</action>	Insert a new data in the specific line Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	

Action name	Example	Description	Restriction	Supported version
CTDeleteFocusLine	<action>CTDeleteFocusLine</action>	Delete focus data	focus line number variable applicable R/@	
CTDeleteLine	<action>CTDeleteLine</action>	Delete specific data Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	
CTReadFocusLine	<action>CTReadFocusLine</action>	Read the focus line data to the value register	focus line number variable applicable R/@	
CTReadLine	<action>CTReadLine</action>	Read the line data to the value register Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	
CTWriteFocusLine	<action>CTWriteFocusLine</action>	Write the register data to the focus line	focus line number variable applicable R/@	

Action name	Example	Description	Restriction	Supported version
CTWriteLine	<action>CTWriteLine</action>	Write the register data to the specific line Specified line number: defined in the table variable "operation line number variable"	operation line number variable applicable R/@	
CTPageUp	<action>CTPageUp</action>	turn previous page of table data		
CTPageDown	<action>CTPageDown</action>	turn next page of table data		

12.2 Action with argument

The arguments of this type of action will be stored independently, so the arguments will not be displayed in the action list.

If you want to check the arguments, please click the target action in the action list first, and then you can find the required information in the argument setting area in the middle.

Action name	Example	Description	Restriction	Supported version
Switch Screen Arg1: ScreenName	<Action name="ShowScreen"> <Arg index="1">EDTOperation</Arg> </Action>	Display the screen with the specified name. If the screen is made in the form of screen template, this action is required to switch screen.		10.118.39

Action name	Example	Description	Restriction	Supported version
MMI Variant set value Arg1: Variant type (VAR/STR) Arg2: Variant number (ex: 100) Arg3: Variant value (ex: G01)	<Action name="SetVariantValue"> <Arg index="1">STR</Arg> <Arg index="2">100</Arg> <Arg index="3">G01</Arg> </Action>	fill up the value of device	Only VAR/STR are supported	10.118.39
Assign Main Program Start Line No Arg1_type:: Type of Axis Group (VAR/CONSTNUM) Arg1_value:: Axis Group No. (ex: 1) Arg2_type: Type of Line No. (VAR) Arg2_value:: Line No. (ex: 258)	<Action Name="AssignMainProgramStartLineNo"> <Arg Index="1" Type="CONSTNUM">1</Arg> <Arg Index="2" Type="VAR">258</Arg> </Action>	Assign Line No. of current main program.	- O888800 is not supported. "Type of Axis Group" only supports VAR/CONSTNUM "Type of Line No." only supports VAR - Assign Line No. while machine state is "ready".	10.118.52H, 10.118.56B, 10.118.57

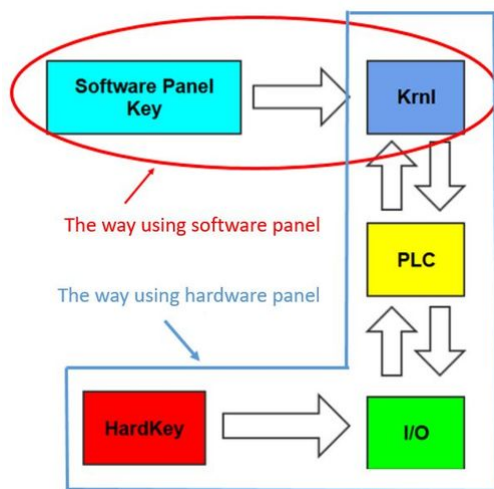
12.3 Software panel action

- requirement description

The special machines in some industry (such as automation, woodworking machines, etc.), in order to save costs, ease of operation and other factors, most of the hardware is not **equipped with a hardkey operation panel**.

Syntec provides a solution to replace the traditional physical buttons, and provides a HMI standard software panel dedicated to various industries (this software panel can be customized through eHMI according to different needs), so that the user **only needs to trigger the software button display on the HMI software panel** without using the hardkey operation panel to achieve various machining operations. (Such as: trigger cycle start, pause, JOG, machining mode switching, etc.).

- [function operation framework]



Take the most commonly used **cycle start** as an example. The traditional operation method is to press the cycle start button on the HardKey. This button will trigger a specific I point, so when the PLC scans, it will be based on the logic written by the PLC, detecting whether the I point On. If on, it will trigger C0 On to notify the core, and when the core finds C0 On, it will execute the cycle start action accordingly. However, in the above process, not only a hardware operation panel (HardKey) is required, but also the PLC must cooperate with writing related logic to correctly notify the core to execute the cycle start action.

Using the software panel function to trigger the software buttons displayed on the HMI software panel directly informs the core to execute the cycle start action, instead of notifying the core through the PLC first.

- [corresponding list of Action name and R value of software panel function]

support version number: after 10.116.34, 10.117.34

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
machining start	_CycleStart [example] _CycleStart stands for start machining	R16 000	Trigger Software Panel _CycleStart Action	This R value corresponds to the _CycleStart action of the software panel. When the user triggers the software panel _CycleStart , this R value is equal to 1.	On-Shot	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16 001	Disable Direct Cycle Start by Software Panel	If the R value is equal to 0, the _CycleStart of the software panel is triggered, and the system will directly notify to start machining; If the R value is not 0, the _CycleStart of the software panel is triggered, and the system will not notify to start machining.	-	read / edit
machining pause	_FeedHold [example] _FeedHold stands for pause machining	R16 002	Trigger Software Panel _FeedHold Action	This R value corresponds to the _FeedHold action of the software panel. When the user triggers the _FeedHold of the software panel, the R value is equal to 1.	On-Shot	read
		R16 003	Disable Direct Feed Hold by Software Panel	If the R value is equal to 0, the _FeedHold of the software panel is triggered, and the system will directly notify to pause machining; If the R value is not 0, the _FeedHold of the software panel is triggered, and the system will not notify to pause machining.	-	read / edit

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short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
specific axis start/end positive JOG specific axis start/end negative JOG	_Jog+Axis_N, _StopJog+Axis_N _Jog-Axis_N, _StopJog-Axis_N [argument] N is the axis ID, only integers 1~16 are accepted [example] _Jog+Axis_2 represents the specified second axis to start positive JOG _StopJog+Axis_2 represents the specified second axis to end positive JOG _Jog-Axis_3 represents the specified third axis to start negative JOG _StopJog-Axis_3 represents the specified third axis to end of the negative JOG	R16 004	Trigger Software Panel _Jog+Axis_1, _StopJog+Axis_1 Action	This R value corresponds to the _Jog+Axis_1, _StopJog+Axis_1 actions of the software panel. When the user triggers _Jog+Axis_1 on the software panel, the R value is equal to 1. When the user triggers _StopJog+Axis_1 on the software panel, the R value is equal to 0.	Hold	read
		R16 005	Disable Direct X Axis JOG + by Software Panel	If the R value is equal to 0 , the _Jog+Axis_1 of the software panel is triggered, and the system will directly notify the system X Axis JOG +; If the R value is not 0, the _Jog+Axis_1 of the software panel is triggered, and the system will not notify the system X Axis JOG +;	-	read / edit
		R16 006	Trigger Software Panel _Jog-Axis_1, _StopJog-Axis_1 Action	This R value corresponds to the _Jog-Axis_1, _StopJog-Axis_1 action of the software panel. When the user triggers _Jog-Axis_1 on the software panel, the R value is equal to 1. When the user triggers _StopJog-Axis_1 on the software panel, the R value is equal to 0.	Hold	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16 007	Disable Direct X Axis JOG - by Software Panel	If the R value is equal to 0, the _Jog-Axis_1 of the software panel is triggered, and will directly notify the system X Axis JOG -; If the R value is not 0, the _Jog-Axis_1 of the software panel is triggered, and will not notify the system X Axis JOG -;	-	read / edit
		R16 008	Trigger Software Panel _Jog+Axis_2, _StopJog+Axis_2 Action	This R value corresponds to _Jog+Axis_2, _StopJog+Axis_2 action of the software panel. When the user triggers _Jog+Axis_2 on the software panel, the R value is equal to 1. When the user triggers _StopJog+Axis_2 on the software panel, the R value is equal to 0.	Hold	read
		R16 009	Disable Direct Y Axis JOG + by Software Panel	If the R value is equal to 0, the _Jog+Axis_2 of the software panel is triggered, and will directly notify the system Y Axis JOG + ; If the R value is not 0, the _Jog-Axis_1 of the software panel is triggered, _Jog+Axis_2, and will not notify the system Y Axis JOG + .	-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16010	Trigger Software Panel _Jog-Axis_2 , _StopJog-Axis_2 Action	This R value corresponds to _Jog-Axis_2, _StopJog-Axis_2 action of the software panel. When the user triggers _Jog-Axis_2 on the software panel, the R value is equal to 1. When the user triggers _StopJog-Axis_2 on the software panel, the R value is equal to 0.	Hold	read
		R16011	Disable Direct Y Axis JOG - by Software Panel	If the R value is equal to 0, the _Jog-Axis_2 of the software panel is triggered, and will directly notify the system Y Axis JOG - ; If the R value is not 0, the _Jog-Axis_2 of the software panel is triggered, and will not notify the system Y Axis JOG - .	-	read / edit
		R16012	Trigger Software Panel _Jog+Axis_3, _StopJog+Axis_3 is_3 Action	This R value corresponds to _Jog+Axis_3, _StopJog+Axis_3 action of the software panel. When the user triggers _Jog+Axis_3 on the software panel, the R value is equal to 1. When the user triggers _StopJog+Axis_3 on the software panel, the R value is equal to 0.	Hold	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16 013	Disable Direct Z Axis JOG + by Software Panel	If the R value is equal to 0, the _Jog+Axis_3 of the software panel is triggered, and will directly notify the system Z Axis JOG + ; If the R value is not 0, the _Jog+Axis_3 of the software panel is triggered, and will not notify the system Z Axis JOG + 。	-	read / edit
		R16 014	Trigger Software Panel _Jog-Axis_3 , _StopJog-Axis_3 Action	This R value corresponds to _Jog-Axis_3, _StopJog-Axis_3 action of the software panel. When the user triggers _Jog-Axis_3 on the software panel, the R value is equal to 1. When the user triggers _StopJog-Axis_3 on the software panel, the R value is equal to 0.	Hold	read
		R16 015	Disable Direct Z Axis JOG - by Software Panel	If the R value is equal to 0, the _Jog-Axis_3 of the software panel is triggered, and will directly notify the system Z Axis JOG - ; If the R value is not 0, the _Jog-Axis_3 of the software panel is triggered, and will not notify the system Z Axis JOG - 。	-	read / edit
		R16 016 ~R16067	Trigger Software Panel _Jog+/- Axis_4~16 , _StopJog+/- Axis_4~16 Action	same as above	Hold	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
			Disable Direct 4th~16th Axis JOG + / - by Software Panel		-	read / edit
MPG simulation	_MPGSimuOn , _MPGSimuOff [example] - _MPGSimuOn represents entering the MPG simulation _MPGSimuOff represents leaving the MPG simulation	R16068	Trigger Software Panel _MPGSimuOn , _MPGSimuOff Action	This R value corresponds to _MPGSimuOn , _MPGSimuOff action of the software panel. When the user triggers _MPGSimuOn on the software panel, the R value is equal to 1. When the user triggers _MPGSimuOff on the software panel, the R value is equal to 0.	Hold	read
		R16069	Disable Direct MPG Simulation by Software Panel	If the R value is equal to 0 , the _MPGSimuOn of the software panel is triggered, and will directly notify the system to enter MPG Simulation ; If the R value is not 0 , the _MPGSimuOn of the software panel is triggered, and will not notify the system to enter MPG Simulation	-	read / edit

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short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
Set the machine coordinates of the specified axis (refer to R38)	_SetMachinePosAxis_N [argument] N is the axis ID, only integers 1~16 are accepted [example] _SetMachinePosAxis_16 represents to set the machine coordinate of the sixteenth axis to the value of R38	R16070	Trigger Software Panel _SetMachinePosAxis_1 Action	This R value corresponds to _SetMachinePosAxis_1 action of the software panel. When the user triggers _SetMachinePosAxis_1 on the software panel, the R value equal to 1.	On-Shot	read
		R16071	Disable Direct Set X Axis Machine Position by Software Panel	If the R value is equal to 0 , the _SetMachinePosAxis_1 of the software panel is triggered and will directly notify the system Set X Axis Machine Position ; If the R value is not 0 , the _SetMachinePosAxis_1 of the software panel is triggered, and will not notify the system Set X Axis Machine Position .	-	read / edit
		R16072	Trigger Software Panel _SetMachinePosAxis_2 Action	This R value corresponds to _SetMachinePosAxis_2 action of the software panel. When the user triggers _SetMachinePosAxis_2 on the software panel, the R value equal to 1.	On-Shot	read
		R16073	Disable Direct Set Y Axis Machine Position by Software Panel	If the R value is equal to 0 , the _SetMachinePosAxis_2 of the software panel is triggered, and will directly notify the system Set Y Axis Machine Position ; If the R value is not 0 , the _SetMachinePosAxis_2 of the software panel is triggered, and will not notify the system Set Y Axis Machine Position .	-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16074	Trigger Software Panel _SetMachinePosAxis_3 Action	This R value corresponds to _SetMachinePosAxis_3 of the software panel. When the user triggers _SetMachinePosAxis_3 on the software panel, the R value equal to 1.	On-Shot	read
		R16075	Disable Direct Set Z Axis Machine Position by Software Panel	If the R value is equal to 0 , the _SetMachinePosAxis_3 of the software panel is triggered, and will directly notify the system Set Z Axis Machine Position ; If the R value is not 0 , the _SetMachinePosAxis_3 of the software panel is triggered, and will not notify the system Set Z Axis Machine Position .	-	read / edit
		R16076~R16101	Trigger Software Panel _SetMachinePosAxis_4~16th Action	same as above	On-Shot	read
			Disable Direct Set 4th~16th Axis Machine Position by Software Panel		-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
Enter/exit manual control	_ManualControlOnAxis_N , _ManualControlOffAxis_N [argument] N is the axis ID, only integers 1~16 are accepted [example] _ManualControlOnAxis_1 represents specify the first axis to enter the manual control _ManualControlOffAxis_1 represents specify the first axis to exit the manual control	R16 102	Trigger Software Panel _ManualControlOnAxis_1 , _ManualControlOffAxis_1 Action	This R value corresponds to _ManualControlOnAxis_1 , _ManualControlOffAxis_1 action of the software panel. When the user triggers _ManualControlOnAxis_1 on the software panel, the R value is equal to 1. When the user triggers _ManualControlOffAxis_1 on the software panel, the R value is equal to 0.	Hold	read
		R16 103	Disable Direct X Axis MANUAL CONTROL by Software Panel	If the R value is equal to 0 , the _ManualControlOnAxis_1 of the software panel is triggered, and will directly notify the system to enter X Axis MANUAL CONTROL ; If the R value is not 0 , the _ManualControlOnAxis_1 of the software panel is triggered, , and will not notify the system to enter X Axis MANUAL CONTROL .	-	read / edit
		R16 104	Trigger Software Panel _ManualControlOnAxis_2 , _ManualControlOffAxis_2 Action	This R value corresponds to _ManualControlOnAxis_2, _ManualControlOffAxis_2 action of the software panel. When the user triggers _ManualControlOnAxis_2 on the software panel, the R value is equal to 1. When the user triggers _ManualControlOffAxis_2 on the software panel, the R value is equal to 0.	Hold	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16 105	Disable Direct Y Axis MANUAL CONTROL by Software Panel	If the R value is equal to 0, the _ManualControlOnAxis_2 of the software panel is triggered, and will directly notify the system to enter Y Axis MANUAL CONTROL ; If the R value is not 0, the _ManualControlOnAxis_2 of the software panel is triggered, will not notify the system to enter Y Axis MANUAL CONTROL.	-	read / edit
		R16 106	Trigger Software Panel _ManualControlOnAxis_3 , _ManualControlOffAxis_3 Action	This R value corresponds to _ManualControlOnAxis_3, _ManualControlOffAxis_3 action of the software panel. When the user triggers _ManualControlOnAxis_3 on the software panel, the R value is equal to 1. When the user triggers _ManualControlOffAxis_3 on the software panel, the R value is equal to 0.	Hold	read
		R16 107	Disable Direct Z Axis MANUAL CONTROL by Software Panel	If the R value is equal to 0, the _ManualControlOnAxis_3 of the software panel is triggered, and will directly notify the system to enter Z Axis MANUAL CONTROL ; If the R value is not 0, the _ManualControlOnAxis_3 of the software panel is triggered, will not notify the system to enter Z Axis MANUAL CONTROL.	-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16108~R16133	Trigger Software Panel _ManualControlOnAxis_4~16 , _ManualControlOffAxis_4~16 Action	same as above	Hold	read
			Disable Direct 4th~16th Axis MANUAL CONTROL by Software Panel		-	read / edit
Reset	_Reset [example] _Reset represents reset	R16134	Trigger Software Panel _Reset Action	This R value corresponds to _Reset action of the software panel. When the user triggers _Reset on the software panel, the R value is equal to 1.	One-Shot	read
		R16135	Disable Direct Reset by Software Panel	If the R value is equal to 0 , triggers _Reset on the software panel, and will directly notify the system Reset ; If the R value is not 0 , triggers _Reset on the software panel, and will not notify the system Reset .	-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
Single block execution	_SingleBlockOn, _SingleBlockOff [example] _SingleBlockOn represents enter single block execution _SingleBlockOff represents exit single block execution	R16 136	Trigger Software Panel _SingleBlockOn, _SingleBlockOff Action	This R value corresponds to _SingleBlockOn, _SingleBlockOff action of the software panel. When the user triggers _SingleBlockOn on the software panel, the R value is equal to 1. When the user triggers _SingleBlockOff on the software panel, the R value is equal to 0.	Hold	read
		R16 137	Disable Direct Single Block by Software Panel	If the R value is equal to 0 , the _SingleBlockOn of the software panel is triggered, and will directly notify the system to enter Single Block ; If the R value is not 0 , the _SingleBlockOn of the software panel is triggered, will not notify the system to enter Single Block .	-	read / edit

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short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
machining mode selection	_Mode_N [argument] N is the mode number, only integers 1~7 are accepted [example] _Mode_1 represents enter the "program editing" mode _Mode_2 represents enter the "automatic execution" mode _Mode_3 represents enter the "MDI" mode _Mode_4 represents enter the "JOG" mode _Mode_5 represents enter the "INCJOG" mode _Mode_6 represents enter the "MPG" mode _Mode_7 represents enter the "home searching" mode	R16 138	Software Panel Mode Selection	This R value corresponds to the argument value of _Mode_N Action, and corresponds to the machining mode: 1: program editing 2: automatic execution 3: MDI 4: JOG 5: INCJOG 6: MPG 7: home searching For example: If _Mode_2 is triggered, the R value is equal to 2 and it represents that the trigger switching machining mode is "automatic execution".	Hold	read
		R16 139	Disable Direct Change Mode Selection by Software Panel	If the R value is equal to 0 , the _Mode_N of the software panel is triggered, and will directly notify the system to enter Switch machining mode ; If the R value is not 0 , the of the software panel is triggered, _Mode_N , and will not notify the system to enter Switch machining mode .	-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
The gain of the first MPG and JOG settings	_IncrementFeed_N [argument] N is the override, only integers are accepted [example] _IncrementFeed_10 represents the gain of the first MPG and JOG is 1	R16 140	Software Panel Increment Feed	This R value corresponds to the argument value of _IncrementFeed_N Action, and corresponding to the gain of the first MPG and JOG . For example: if _IncrementFeed_10 is triggered, the R value is equal to 10 and represents the gain of the first MPG and JOG is 10 . The movement distance of JOG changes from 0.001 to 0.010.	Hold	read
		R16 141	Disable Direct Change Increment Feed by Software Panel	If the R value is equal to 0 , the _IncrementFeed_N of the software panel is triggered, and will directly notify the system to modify the gain of the first MPG and JOG . If the R value is not 0 , the _IncrementFeed_N of the software panel is triggered, and will not notify the system to modify the gain of the first MPG and JOG .	-	read / edit
Spindle override settings	_SpindleOverride_N [argument] N is the override, only integers are accepted [example] _SpindleOverride_50 represents spindle override 50%	R16 142	Software Panel Spindle Override	This R value corresponds to the argument value of _SpindleOverride_N Action, and corresponds to the spindle override . For example, If _SpindleOverride_50 is triggered, the R value is equal to 50 and it means that the spindle override have been changed to 50% .	Hold	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16 143	Disable Direct Change Spindle Override by Software Panel	If the R value is equal to 0, the _SpindleOverride_N of the software panel is triggered, and will directly notify the system to modify spindle override; If the R value is not 0, the _SpindleOverride_N of the software panel is triggered, and will not notify the system to modify spindle override	-	read / edit
G01 override settings	_FeedrateOverride_N [argument] N is the override, only integers are accepted [example] _FeedrateOverride_50 represents G01 override 50%	R16 144	Software Panel Feedrate Override	This R value corresponds to the argument value of _FeedrateOverride_N Action, and corresponding to G01 feedrate override. For example, if _FeedrateOverride_50 is triggered, the R value is equal to 50 and it means that the G01 override is 50%.	Hold	read
		R16 145	Disable Direct Change Feedrate Override by Software Panel	If the R value is equal to 0, the _FeedrateOverride_N of the software panel is triggered, and will directly notify the system to modify G01 feedrate override; If the R value is not 0, the _FeedrateOverride_N of the software panel is triggered, will not notify the system to modify G01 feedrate override.	-	read / edit

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
JOG override settings	_JOGOverride_N [argument] N is the override, only integers are accepted [example] _JOGOverride_50 represents JOG override 50%	R16 146	Software Panel JOG Override	This R value corresponds to the argument value of _JOGOverride_N Action, and correspond to JOG override . For example, If _JOGOverride_N is triggered, the R value is equal to 50 and it means that the JOG override is 50% .	Hold	read
		R16 147	Disable Direct Change JOG Override by Software Panel	If the R value is equal to 0 , the _JOGOverride_N of the software panel is triggered, and will directly notify the system modify JOG override ; If the R value is not 0 , the _JOGOverride_N of the software panel is triggered, will not notify the system to modify JOG override .	-	read / edit
G00 override settings	_RapidTravelOverride_N [argument] N is the override, only integers are accepted [example] _RapidTravelOverride_50 represents G00 override 50%	R16 148	Software Panel Rapid Traverse Override	This R value corresponds to the argument value of _RapidTravelOverride_N Action, and corresponds to G00 override . For example, If _RapidTravelOverride_N is triggered, the R value is equal to 50 and it means that the G00 override is 50% .	Hold	read

short description	action name	No.	Name	function description	action type (note)	PLC read & edit rules
		R16 149	Disable Direct Change Rapid Traverse Override by Software Panel	If the R value is equal to 0, the _RapidTravelOverride_N of the software panel is triggered, will directly notify the system modify G00 override; If the R value is not 0, the _RapidTravelOverride_N of the software panel is triggered, will not notify the system to modify G00 override	-	read / edit

Note:

[Action type]

One-Shot: the software panel design needs to be rising edge triggered (ex: cycle start, feedhold, reset, ...)

Hold: the software panel design needs to maintain the state after triggering(ex: Axis JOG +/-, mode selection, Feedrate Override, Rapid Traverse Override, Axis MANUAL CONTROL, ...)

• Precautions

- When there is a need for **customized machining actions**, please use **the R value corresponding to the software button function to close the software button and directly trigger the corresponding machining operation.**
- At present, for the selection of **machining mode & override, Jog**, this type of regularly used button, if there are **hardware buttons and software buttons both existing, or the software buttons conflict with the logic in the PLC**, please **use the R value corresponding to software button function to close the software button and directly trigger the corresponding machining operation.**
- When using this function, please first check **whether the function already has a physical key, and whether the PLC has the logic to trigger the same action. If there is the above situation, please set the corresponding R value equal to 1. Turn off the HMI and directly notify the core to perform various machining actions to avoid unexpected actions.**
- The **R value switch** corresponding to the software button function requires some waiting time after being triggered and **cannot take effect immediately**. Therefore, it is recommended to **avoid dynamic switching in the application** to avoid unexpected misoperation due to update timing issues.
- The override of software button function, only supports percentage, not the levels.
- **[When there is requirement for customized machining actions, how to meet it?]**

For example, before Cycle Start, you need to trigger a certain O point to release the brake, or check that the safety door I point must be On before machining can be performed.

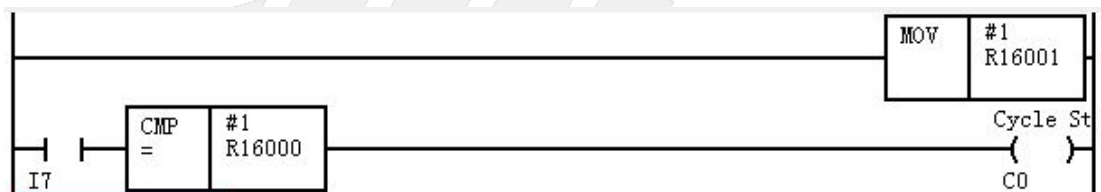
If you press the button on the HMI to directly notify the core Cycle Start, **the above protection cannot be provided, which may cause the machine error and cause problems such as collision. Please be careful.**

In this application scenario, the user must edit the relevant protection logic through the PLC and **set the corresponding R value equal to 1 and turn off the mechanism that HMI directly notify the core start cycle.** For details, please refer to the Action name and R value of the software panel function table.

For example, I7 represents the safety door I point. If the requirement is to check the safety door, the I point must be on to start cycle. Then the PLC must be protected as follows. First, R16001 must be set to 1, and the mechanism that the HMI directly notify the core to start cycle must be turned off.

Then judged **R16000 signal that will be filled in when the cycle start API is called and the corresponding safety door I point I7 On are established at the same time, and then C0 can be triggered to notify the core to start cycle.**

If the mechanism that HMI directly notifies the core Cycle Start is not properly turned off, the required protection will not be achieved, which may cause the machine error and cause problems such as collision. Please be careful.



- [If the hardware button and software button both exist or the software button conflicts with the PLC logic]

Please be sure to **set the corresponding R value equal to 1, turn off the mechanism that the HMI directly informs the core to perform machining actions.** For details, please refer to the Action name and R value of the software panel function table, **otherwise it may cause the machine error and cause problems such as collision. Please be careful.**

For example, there is a **machining mode selection** in both the hardware button and the software button, or the machining mode selected in the PLC is different from the machining mode set by the software.

Assuming that the hardware buttons or PLC logic is set to automatic mode, and the software buttons are set to MPG mode, there is a conflict between the two modes, and the system will not operate normally.

Therefore, please **select the corresponding R16038 equal to 1 of the machining mode, and turn off the path of software directly notifying the core to switch the machining mode.**

Same as other situations, such as cycle start or JOG, which may cause twice trigger.

All in all, when using this function, please first check whether the function corresponding to the software already has a physical key, and whether the PLC has logic to trigger the same action.

Please be sure to set the corresponding R value equal to 1, turn off the mechanism that the HMI directly informs the core to perform machining actions, avoid unexpected actions happen.



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13 AutoSDUpgrade_2021 Manual.

中文版 Mandarin Version: [AutoSDUpgrade_2021 操作手册](#)

- [Introduction](#)
- [Note](#)
- [Operation Guide](#)
 - [Preparation](#)
 - [Steps](#)
 - [Result](#)

13.1 Introduction

This tool helps to upgrade the controllers/servo drives to a stable version which has fixed problems listed below.

Name	AutoSDUpgrade_2021 (version 2.0.1)	AutoSDUpgrade_2021 (v3.0.0)
When to use	• Servo-drive: • If AL930 alarm is not triggered while the battery voltage is too low, please upgrade the drives using this tool. • Encountered AL133 frequently. • Controller: • Versions between 10.118.30H~10.118.30L、10.118.32H~10.118.32L may encounter problems listed below: • ATEST-2169 OQC not working • ATEST-2190 Threads stop when change day、many unstable datas within the same day. Use this tool to fix problems above.	• Servo-drive: • If AL930 alarm is not triggered while the battery voltage is too low, please upgrade the drives using this tool. • Encountered AL133 frequently. • Controller: • Versions between 10.118.30H~10.118.30N、10.118.32H~10.118.32N may encounter problems listed below: • ATEST-2169 OQC not working • ATEST-2190 Threads stop when change day、many unstable datas within the same day. Use this tool to fix problems above.
Restrictions	1. Image restrictions a. AM35x only support image version above 7.21(included). b. AM335x only support image version above 7.42(included). 2. Software restrictions • Only support software version between 10.116.36P and 10.118.48.x. (10.116.54.x、 10.118.12.x ...etc. are all included) 3. Product restriction • This tool does not support Laser product(70CA, 70CB, 70CB-5, 710CA, 70SA, 70SB, 71SA, 710SA)	

Contorller-Upgrade target versions	• Original version at 10.118.30H~10.118.30L : will be upgraded to 10.118.32N • Original version at 10.118.32H~10.118.32L : will be upgraded to 10.118.32N If version is not in the range above, upgradation will not be execute but will still process servo-drive check.	• Original version at 10.118.30H~10.118.30N : will be upgraded to 10.118.32O • Original version at 10.118.32H~10.118.32N : will be upgraded to 10.118.32O If version is not in the range above, upgradation will not be execute but will still process servo-drive check.
Cloud software target version	N/A	If software upgraded, cloud software v2.5 will be installed.
Servo-drive-Upgrade target versions	Only take normal axes as fix targets • Original version at 2.4.0~2.14.14 : will be upgraded to 2.14.15 • Original version at 3.0.0~3.0.20 : will be upgraded to 3.0.21 • Original version at 4.0.0~4.0.9 : will be upgraded to 4.0.10 If version is not in the range above, upgradation will not be execute.	Only take normal axes version as check targets If any normal axis needs to be upgraded, every Syntec servo drive will be upgraded. • Versions need to be upgraded • 2.4.0~2.14.14 • 3.0.0~3.0.22 • 4.0.0~4.0.10 • Upgradation target(According to hardware) • 3.0.23 • 4.0.11
Image(BSP) target versions	N/A	If software/servo-drives are upgraded, image will be upgraded to enhance reliability. • 335x : image 7.47~7.69→ 7.70

13.2 Note

1. Before using the tool, please make sure that the controller is under servo-off status(ATC/ROT...etc. axes that can be controlled by PLC, please make sure servo-off R-bit is triggered, too.).
2. After executing the tool, there will be a log-file named "AutoSDUpgrade.log" in the root folder of the USB.
 - a. If the tool do not function normally, **Please provide this log file** and contact with Syntec.
3. After executing the tool, please remove the USB and restart the controller.
4. Please do not remove USB or restart before any message start with "****" to prevent damage.
5. Please do not replace any file under tool folder to prevent any damage to the drive or the controller.
6. If encounter "Space not enough" hint, please wait until drives check finished and restart to fix by steps:
 - a. Check and clean up Macro files.
 - b. Check and simplify OCRes/PrdMMIRes/ESI, backup them and remove them via SA first before reinstall a newer version.

- c. If steps above can not fix the problem, please contact with Syntec.

13.3 Operation Guide

13.3.1 Preparation

1. Check the controller's image version is available. If image version too old, please upgrade via AutoUpgrade_DiskA_2018 tool first.
2. Make sure that the controller's software version fit the rules listed in the introduction.
3. Please check that the controller parameter works right and the connection with the servo drive is established correctly.

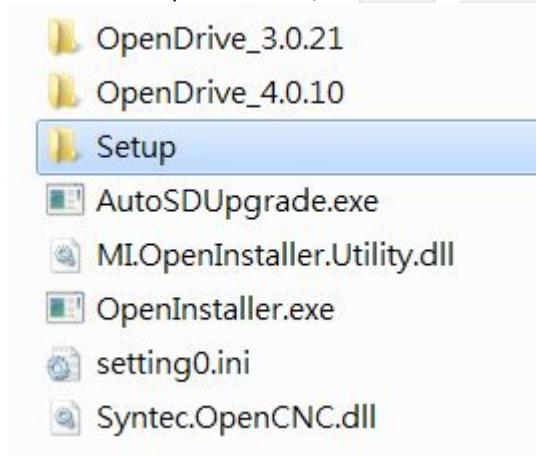
13.3.2 Steps

1. Download the newest tool from <https://www.syntecclub.com/Download.aspx> (under category "Other Tool")
 - a. This tool provides packages with different product group, please download according to product type.

b. Package bane	machine type	machine model	模拟器
ToolName_Mill_GG.zip	Mill	6MA-E, 6MA, 6MB-E, 6MB, 6MD-H, 6MD 11MA, 11MB, 21MA-E, 21MA-H, 21MA, 22MA 210MA-E5, 210MA-E, 210MA-H5, 210MA-H 210MB-E5, 210MB-E, 210MB-H5, 210MB-H 220MA-5, 220MA, 220MB-5, 220MB, 610MA-E5, 610MA-H5	
	GlassGrind	6GA-E, 21GA-E	
ToolName_Lathe.zip	Lathe	6TA-E, 6TA, 6TB, 11TA, 11TB 21TA-E, 21TA-H, 21TA, 21TB, 21TB-E, 21TB-H 22TA, 22TB, 210TB-E5, 210TB-H5, 210TB-H, 220TB-5, 220TB	
ToolName_WOOD.zip	WOOD	60CA, 60PA, 60WA, 60CB, 60PE, 60W-E 600WA, 610WA-H, 610WB-H	The front-end software is placed under "Monitor" folder.

Package bane	machine type	machine model	模拟器
ToolName_Other.zip	eHMC	HC-7C, HC-8A, HC-8B, HC-8C, HC-8E, HC-8S HC-10A, HC-10B, HC-10C, HC-10E, HC-15B, HC-15C, HC-15E	
	FC	FCA, FCB, FCC	
	Laser	70CB, 70CB-5, 71SA, 710CA, 710SA	
	Robot	81RG	
ToolName_All.zip	All above	All above	All above

- Unzip the package and copy all the contents to USB root. (recommend: keep the USB clean without any other files excepts tool data)



* WOOD package will contain an extra folder "Monitor" to provide font-end software.

- Plug the USB to the controller.
- Make sure the controller is under servo-off status.
- Restart the controller.
- This tool will print the process log on the screen. No need to do any operation.
- Wait until any restart hint shows up on the screen.

13.3.3 Result

- After the upgrading process, check the software version in System info. screen. Make sure that the controller version is not in version range with problem.

- a. If the log file present text below, means the upgradation succeeded.

The controller's version has been updated to 10.118.32N successfully.

- b. If the log file present text below, means the controller is fine without upgradation.

There's no need to upgrade the controller.

2. After the upgrading process, check the servo drive version in DeviceManager screen.
Make sure that the servo drives are not in version range with problem.

- a. Check the whole process by log file. If the final message as below, means the process was finished successfully.

***** The whole upgradation succeeded, please remove the USB and restart the controller. *****

- b. If log file or message on the screen show the message as below, means there is no servo drive need to be upgraded.

***** No upgradable Syntec servo drive, please remove the USB and restart the servo drives and the controller. *****

3. If using SDPatch_2021_3.0.0

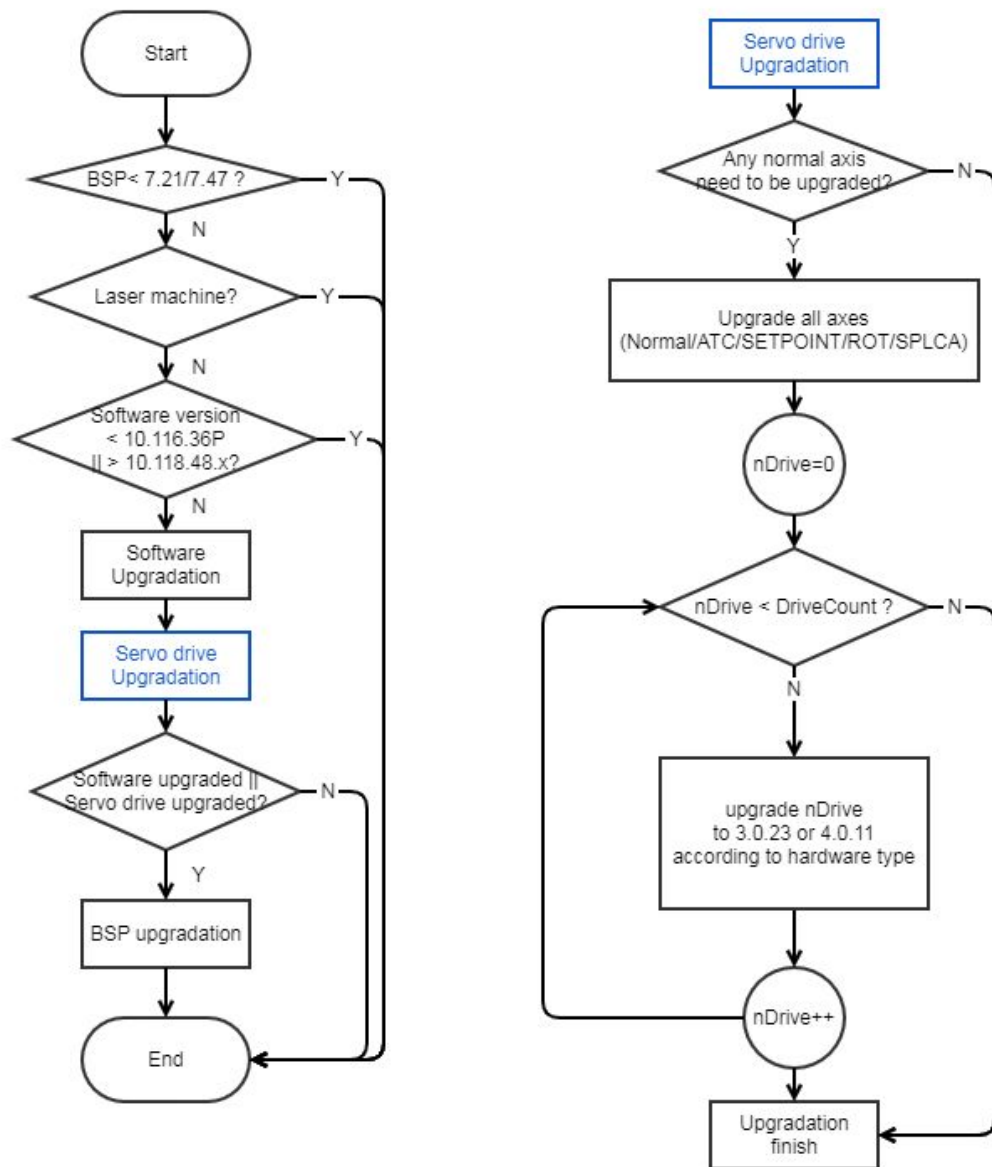
- a. After the upgrading process, check the image version in System info. screen.
b. Check Cloud Software by checking R8=1; R9=205

- i.  R9 record CncCloudAgent version, rules: "major version * 100 + minor version". -1 if version read failed.
ii.  R8 record CncCloudAgent execution result

R8	Description
1	Execute CncCloudAgent succeeded.
0	Not execute CncCloudAgent because software version not support.
-1	CncCloudAgent.exe not exist
-2	Execute CncCloudAgent failed.

Flow chart

[detail](#)



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14 AutoSDUpgrade_2022 Manual.

- [Introduction](#)
- [Note](#)
- [Operation Guide](#)
 - [Preparation](#)
 - [Steps](#)
 - [Result](#)

14.1 Introduction

This tool helps to upgrade the controllers/servo drives to a stable version which has fixed problems listed below.

Name	AutoSDUpgrade_2022 (v1.0.x)	AutoSDUpgrade_2022 (v2.0.x)
When to use	• Servo-drive: • If AL930 alarm is not triggered while the battery voltage is too low, please upgrade the drives using this tool. • Encountered AL133 frequently. • Controller: • Versions between 10.118.30H~10.118.30L、10.118.32H~10.118.32L may encounter problems listed below: • ATEST-2169 OQC not working • ATEST-2190 Threads stop when change day、many unstable datas within the same day. Use this tool to fix problems above.	• Servo-drive: • If AL930 alarm is not triggered while the battery voltage is too low, please upgrade the drives using this tool. • Encountered AL133 frequently. • Controller: • Versions between 10.118.30H~10.118.30N、10.118.32H~10.118.32N may encounter problems listed below: • ATEST-2169 OQC not working • ATEST-2190 Threads stop when change day、many unstable datas within the same day. Use this tool to fix problems above.
Restrictions	1. Image restrictions a. AM35x only support image version above 7.21(included). b. AM335x only support image version above 7.42(included). 2. Software restrictions • Only support software version between 10.116.36P and 10.118.48.x. (10.116.54.x、 10.118.12.x ...etc. are all included) 3. Product restriction • This tool does not support Laser product (70SA, 70SB, 71SA, 710SA)	

Controller-Upgrade target versions	- Original version at 10.118.30H~10.118.30L : will be upgraded to 10.118.32N - Original version at 10.118.32H~10.118.32L : will be upgraded to 10.118.32N If version is not in the range above, upgradation will not be execute but will still process servo-drive check.	- Original version at 10.118.30H~10.118.30N : will be upgraded to 10.118.32O - Original version at 10.118.32H~10.118.32N : will be upgraded to 10.118.32O If version is not in the range above, upgradation will not be execute but will still process servo-drive check.
Servo-drive-Upgrade target versions	Only take normal axes as fix targets - Original version at 2.4.0~2.14.14 : will be upgraded to 2.14.15 - Original version at 3.0.0~3.0.20 : will be upgraded to 3.0.21 - Original version at 4.0.0~4.0.9 : will be upgraded to 4.0.10 If version is not in the range above, upgradation will not be execute.	Only take normal axes version as check targets If any normal axis needs to be upgraded, every Syntec servo drive will be upgraded. - Versions need to be upgraded 2.4.0~2.14.14 3.0.0~3.0.22 4.0.0~4.0.10 - Upgradation target(According to hardware) 3.0.23 4.0.11

14.2 Note

- Before using the tool, please make sure that the controller is under servo-off status(ATC/ROT...etc. axes that can be controlled by PLC, please make sure servo-off R-bit is triggered, too.).
- After executing the tool, there will be a log-file named "AutoSDUpgrade.log" in the root folder of the USB.
 - If the tool do not function normally, **Please provide this log file** and contact with Syntec.
- After executing the tool, please remove the USB and restart the controller.
- Please do not remove USB or restart before any message start with "****" to prevent damage.
- Please do not replace any file under tool folder to prevent any damage to the drive or the controller.
- If encounter "Space not enough" hint, please wait until drives check finished and restart to fix by steps:
 - Check and clean up Macro files.
 - Check and simplify OCRes/PrdMMIRes/ESI, backup them and remove them via SA first before reinstall a newer version.
 - If steps above can not fix the problem, please contact with Syntec.

14.3 Operation Guide

14.3.1 Preparation

- Check the controller's image version is available. If image version too old, please upgrade via AutoUpgrade_DiskA_2018 tool first.
- Make sure that the controller's software version fit the rules listed in the introduction.

3. Please check that the controller parameter works right and the connection with the servo drive is established correctly.

14.3.2 Steps

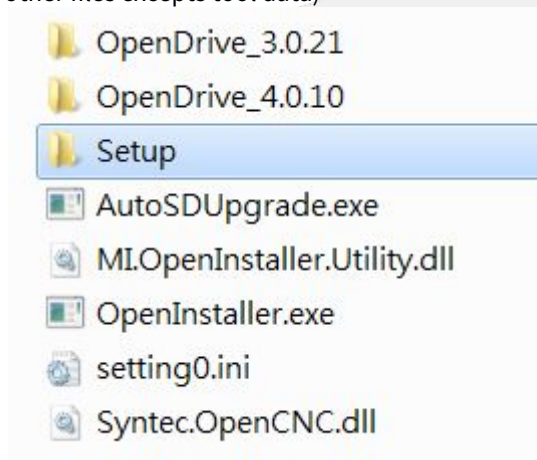
1. Download the newest tool from <https://www.syntecclub.com/Download.aspx> (under category "Other Tool")

- a. This tool provides packages with different product group, please download according to product type.

b. Package bane	machine type	machine model	模拟器
ToolName_Mill_GG.zip	Mill	6MA-E, 6MA, 6MB-E, 6MB, 6MD-H, 6MD 11MA, 11MB, 21MA-E, 21MA-H, 21MA, 22MA 210MA-E5, 210MA-E, 210MA-H5, 210MA-H 210MB-E5, 210MB-E, 210MB-H5, 210MB-H 220MA-5, 220MA, 220MB-5, 220MB, 610MA-E5, 610MA-H5	
	GlassGrind	6GA-E, 21GA-E	
ToolName_Lathe.zip	Lathe	6TA-E, 6TA, 6TB, 11TA, 11TB 21TA-E, 21TA-H, 21TA, 21TB, 21TB-E, 21TB-H 22TA, 22TA PLUS, 22TB, 22TB PLUS, 210TB-E5, 210TB-H5, 210TB-H, 220TB, 220TB PLUS, 220TB-5, 220TB-5 PLUS	
ToolName_WOOD.zip	WOOD	60CA, 60PA, 60WA, 60CB, 60PE, 60W-E 600WA, 610WA-H, 610WB-H	The front-end software is placed under "Monitor" folder.
ToolName_Other.zip	eHMC	HC-7C, HC-8A, HC-8B, HC-8C, HC-8E, HC-8S HC-10A, HC-10B, HC-10C, HC-10E, HC-15B, HC-15C, HC-15E	
	FC	FCA, FCB, FCC	

Package bane	machine type	machine model	模拟器
	Laser	70CB, 70CB-5, 71SA, 710CA, 710SA	
	Robot	81RG	
ToolName_All.zip	All above	All above	All above

- Unzip the package and copy all the contents to USB root. (recommend: keep the USB clean without any other files excepts tool data)



* WOOD package will contain an extra folder "Monitor" to provide font-end software.

- Plug the USB to the controller.
- Make sure the controller is under servo-off status.
- Restart the controller.
- This tool will print the process log on the screen. No need to do any operation.
- Wait until any restart hint shows up on the screen.

14.3.3 Result

- After the upgrading process, check the software version in System info. screen. Make sure that the controller version is not in version range with problem.

- If the log file present text below, means the upgradation succeeded.

The controller's version has been updated to 10.118.32N successfully.

- If the log file present text below, means the controller is fine without upgradation.

There's no need to upgrade the controller.

- After the upgrading process, check the servo drive version in DeviceManager screen. Make sure that the servo drives are not in version range with problem.

- a. Check the whole process by log file. If the final message as below, means the process was finished successfully.

***** The whole upgradation succeeded, please remove the USB and restart the controller. *****

- b. If log file or message on the screen show the message as below, means there is no servo drive need to be upgraded.

***** No upgradable Syntec servo drive, please remove the USB and restart the servo drives and the controller. *****

3. If using SDPatch_2021_3.0.0

- a. After the upgrading process, check the image version in System info. screen.
- b. Check Cloud Software by checking R8=1; R9=205
- i.  R9 record CncCloudAgent version, rules: "major version * 100 + minor version". -1 if version read failed.
- ii.  R8 record CncCloudAgent execution result

R8	Description
1	Execute CncCloudAgent succeeded.
0	Not execute CncCloudAgent because software version not support.
-1	CncCloudAgent.exe not exist
-2	Execute CncCloudAgent failed.

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15 FixFontFile Manual

📘 中文版 Mandarin Version : FixFontFile 操作手册

Content

- [Introduction](#)
- [Notes](#)
- [Environment Requirement](#)
- [Operation](#)
- [Trouble shootings](#)

15.1 Introduction

- This tool is applied to the character issue because of the broken file of IQC fixture (G1K00006).
- This tool can **automatically execute by plugging in the USB**, it can fix the character issue of controller.
- This tool will **replace the broken font file** in the controller (MINGLIU.TTC, COMICBD.TTF, MONACO.TTF).

Supported version	Log
1.0.0	support for replacing font files MINGLIU.TTC, COMICBD.TTF
1.0.1	support for replacing font files MONACO.TTF

15.2 Notes

- Please **do not remove the USB** while the tool is running, this action will cause serious damage to the system.
- If an unexpectedly power failure occurs, user can first try to **remove the USB and reboot completely, then plug the USB back in and reboot the controller again**. The system will try to process font fix again. However, if an abnormal phenomenon occurs and the tool cannot replace the font file normally, Please contact Syntec Customer Service.

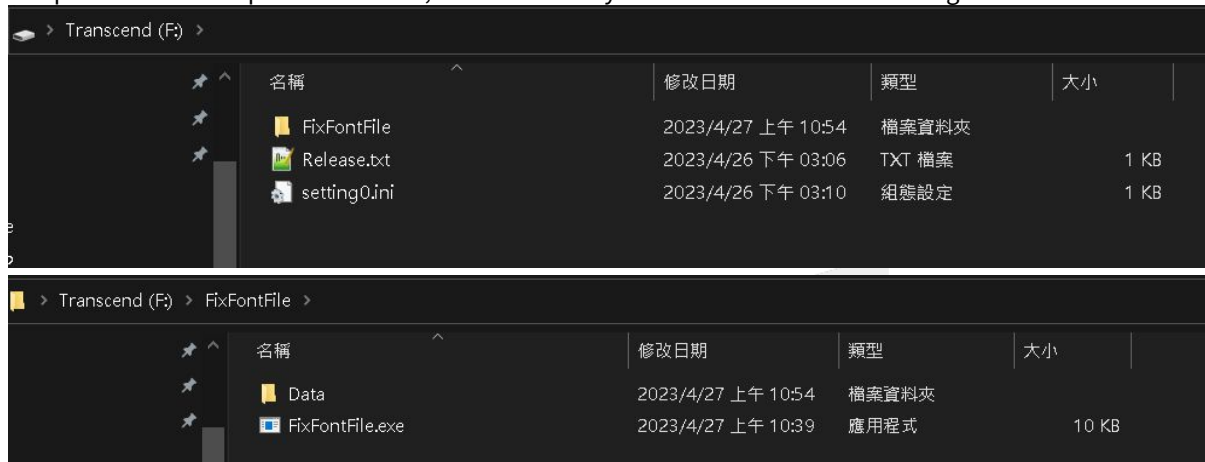
15.3 Environment Requirement

- Operating System : WindowsCE

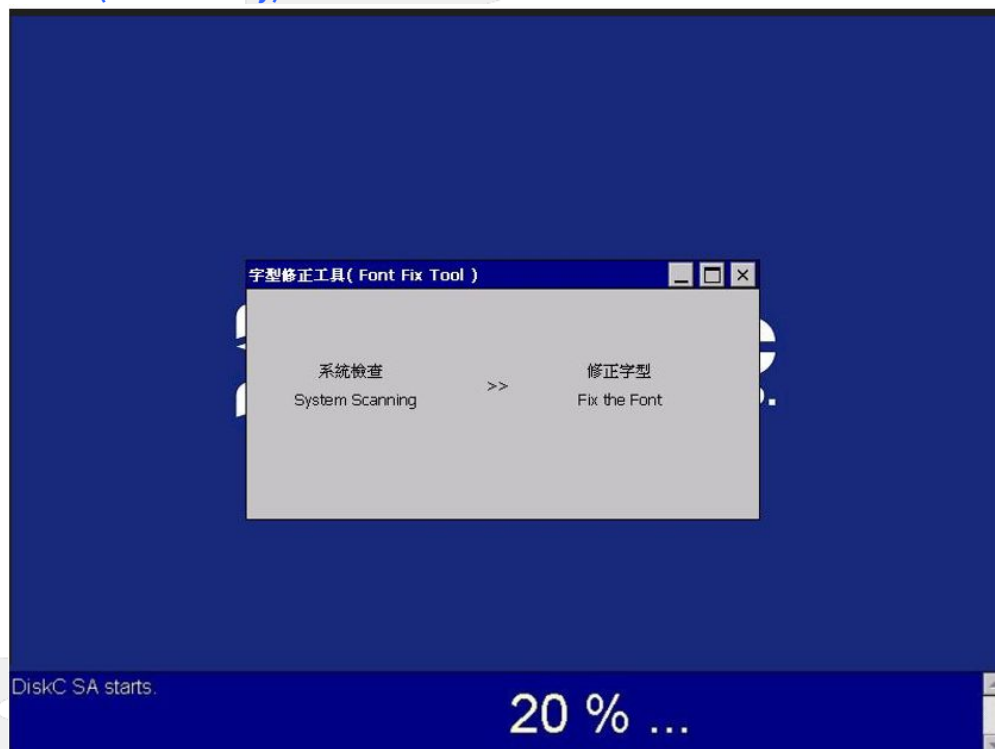
15.4 Operation

1. Please download the tool from the official website:
 - a. Link : <http://www.syntecclub.com/Download.aspx>
 - b. Path : Download => 06. Other Tool => FixFontFile

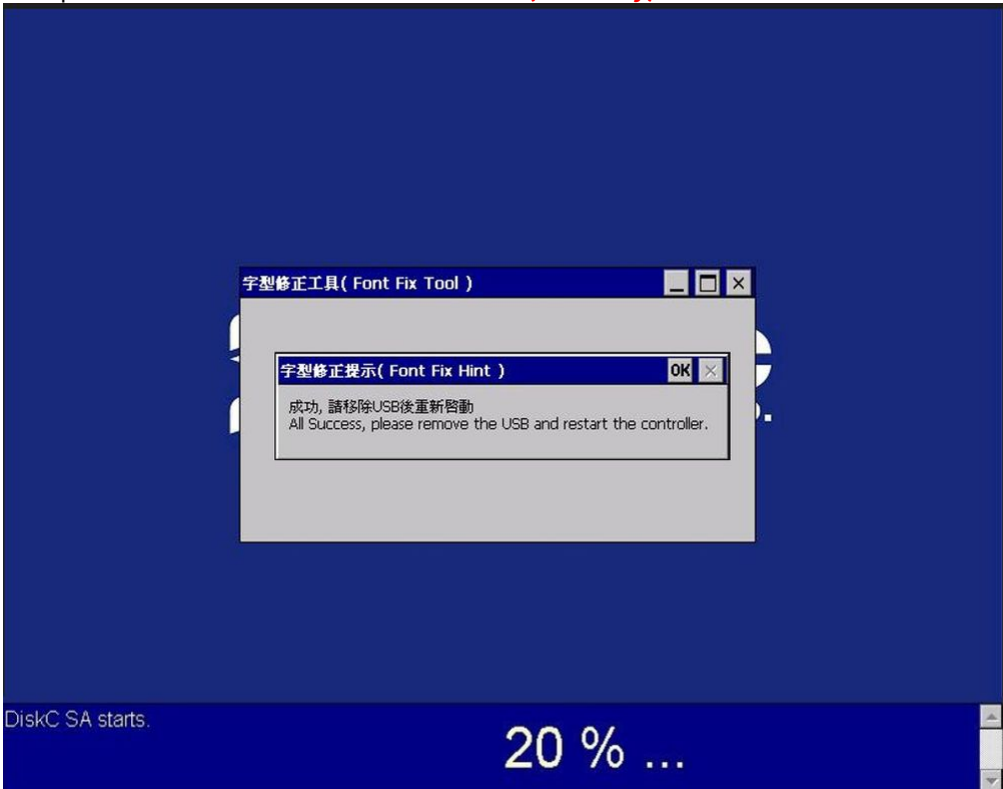
2. Unzip the installation pack to the USB, and the files in your USB are as shown in the figure below:



3. Plug the USB into the controller and power on
4. System scanning (**automatically**)
5. Fix Font (**automatically**)



6. Prompt the user to remove the USB and reboot **(manually)**



7. After reboot, the file replacement of the controller is complete.

15.5 Trouble shootings

- If the following screen appear during installation, please refer to the table below for possible troubleshooting methods

Item	Screen	Method
The OS does not match		Please confirm whether the current operating system is WindowsCE7
Failed to move the font file in controller		Please try to remove the USB and reboot completely, then plug the USB back in and reboot the controller again.

Item	Screen	Method
Failed to import the font file from USB		a. Please check the following files in the folder of FontFixTool. • Data • MINGLIU.TTC • COMICBD.TTF • MONACO.TTF • FontFixTool.exe b. Please try to remove the USB and reboot completely, then plug the USB back in and reboot the controller again.

15.6 FixFontFile Manual_Source

📘 中文版 Mandarin Version : FixFontFile 操作手册

Content

- [Introduction](#)
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- [Trouble shootings](#)

15.6.1 Introduction

- This tool is applied to the character issue because of the broken file of IQC fixture (G1K00006).
- This tool can **automatically execute by plugging in the USB**, it can fix the character issue of controller.
- This tool will **replace the broken font file** in the controller (MINGLIU.TTC, COMICBD.TTF, MONACO.TTF).

Supported version	Log
1.0.0	support for replacing font files MINGLIU.TTC, COMICBD.TTF
1.0.1	support for replacing font files MONACO.TTF

15.6.2 Notes

- Please **do not remove the USB** while the tool is running, this action will cause serious damage to the system.

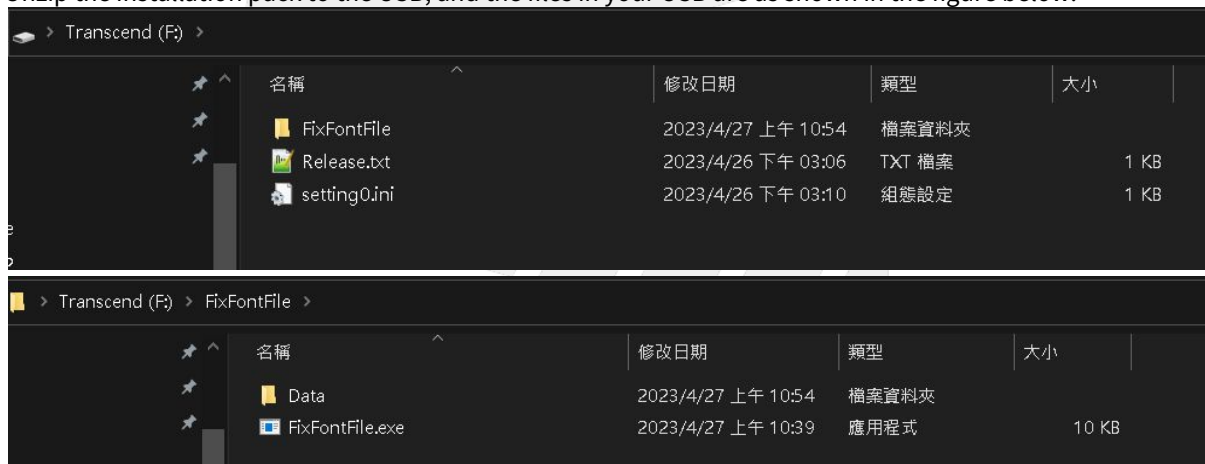
- If an unexpectedly power failure occurs, user can first try to **remove the USB and reboot completely, then plug the USB back in and reboot the controller again**. The system will try to process font fix again. However, if an abnormal phenomenon occurs and the tool cannot replace the font file normally, Please contact Syntec Customer Service.

15.6.3 Environment Requirement

- Operating System : WindowsCE

15.6.4 Operation

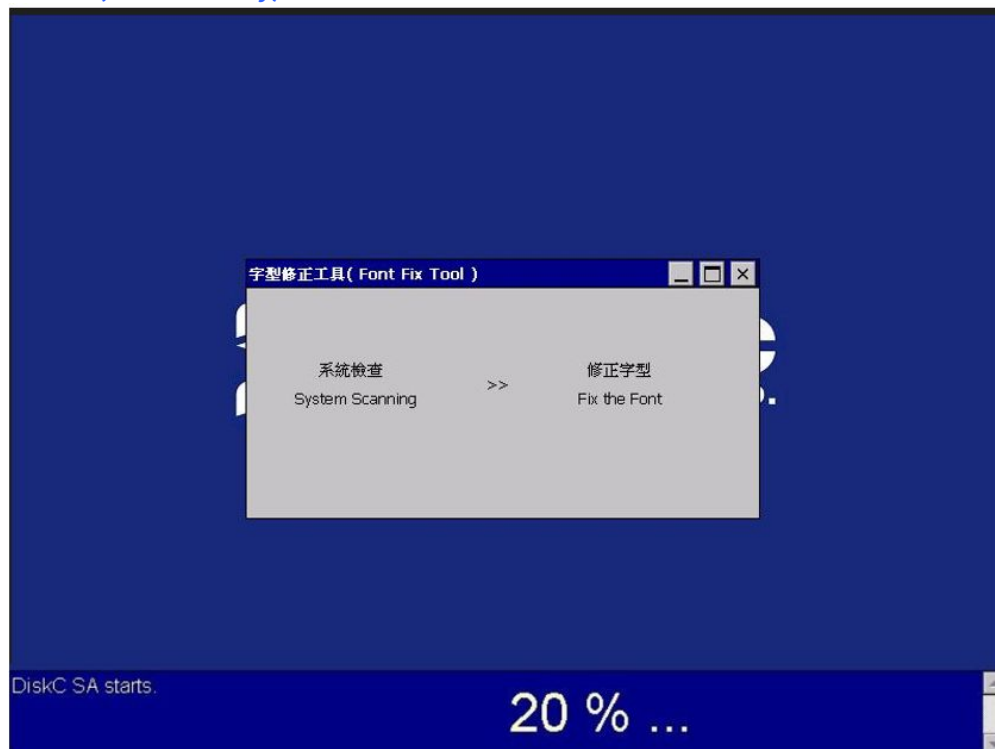
1. Please download the tool from the official website:
 - a. Link : <http://www.syntecclub.com/Download.aspx>
 - b. Path : Download => 06. Other Tool => FixFontFile
2. Unzip the installation pack to the USB, and the files in your USB are as shown in the figure below:



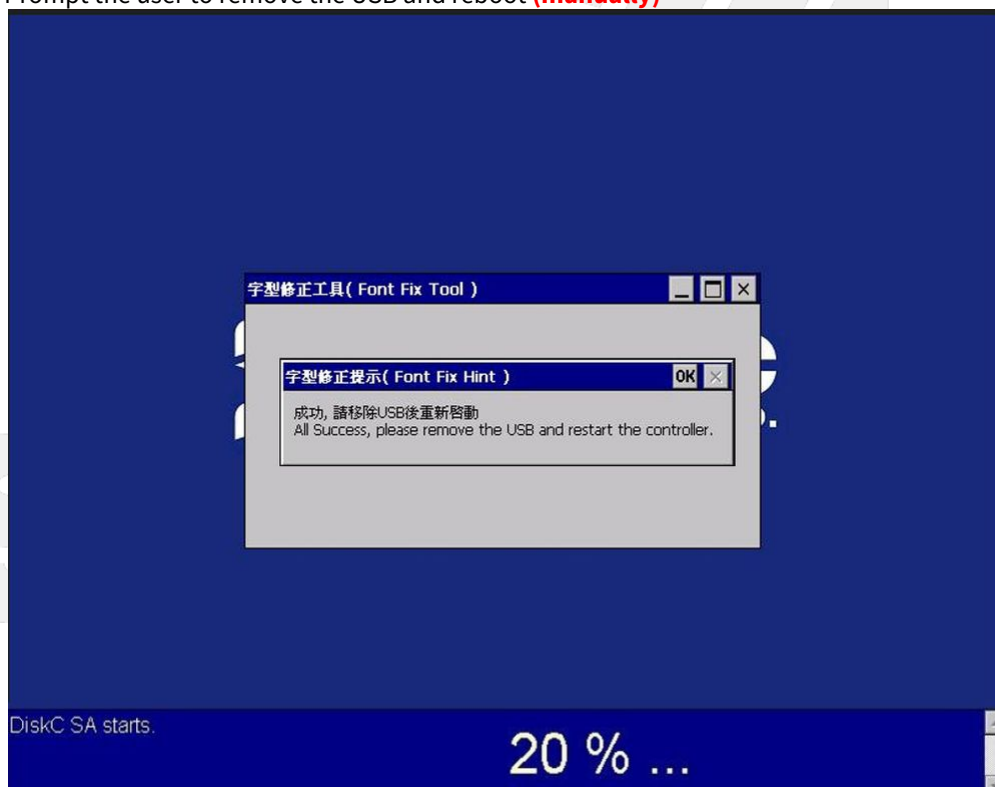
3. Plug the USB into the controller and power on
4. System scanning (**automatically**)

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5. Fix Font (automatically)



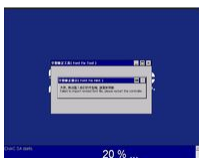
6. Prompt the user to remove the USB and reboot (manually)



7. After reboot, the file replacement of the controller is complete.

15.6.5 Trouble shootings

- If the following screen appear during installation, please refer to the table below for possible troubleshooting methods

Item	Screen	Method
The OS does not match		Please confirm whether the current operating system is WindowsCE7
Failed to move the font file in controller		Please try to remove the USB and reboot completely, then plug the USB back in and reboot the controller again.
Failed to import the font file from USB		Please check the following files in the folder of FontFixTool. Data • MINGLIU.TTC • COMICBD.TTF • MONACO.TTF • FontFixTool.exe Please try to remove the USB and reboot completely, then plug the USB back in and reboot the controller again.

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