
18:18/9:9 DVI Multiplexer

USER MANUAL



< Contents >

Chapter 1. Introduction

1.1 Notice for safe usage	4 page
1.2 Features	4 page
1.3 Place of equipment	4 page

Chapter 2. Construction and Function

2.1 Front-Panel	5 page
2.2 Rear-Panel	6 page
2.3 Consist of system	7 page
2.4 Accessory	7 page

Chapter 3. Setup the Router Information

3.1 Buttons for Network setup	8 page
3.2 How to setup Network	8 page
3.3 Setup the Router ID	8 page

Chapter 4. Installation of ODM1818 and connecting Communication Port

4.1 Installation of ODM1818 Application program	9 page
4.2 Setup the RS232C	11 page
4.3 Setup the Ethernet	13 page
4.4 Setup the USB Driver	15 page

Chapter 5. Control of Router

5.1 Control of Router through the Front-Panel	16 page
5.2 Control of Router through the ODM1818 Application Program	17 page

[Appendix]

A. Command-Set and Sample code for User	23 page
B. Tip for EDID Connection	28 page
C. Installation of the USB Driver	29 page
D. Installation of the Ponyprog2000	32 page

Chapter 1. Introduction

1.1 Notice for safe usage

- Use the assigned power cord or power adaptor!
- Connect the power code to the normal and safe outlet!
- Keep the unit away from the liquid, magnetic and combustible substance!
- Don't place the heavy equipment on the unit.
- Move away from powerful vibration or impact!
- Don't install the unit vertically!
- Don't disassemble the unit of user's own accord!
- When occurring the malfunction or breakdown, contact our company promptly.

1.2 Features

- This unit is designated to broadcast the DVI video signal through the 18's output ports optionally without any distortion & diminution by getting the input DVI video signal source through the 18's input ports.
- Additionally, the unit can connect the 18's output ports with the 72's input sources at the same time by constructing the 3 stages.

- 1) Enable to connect the maximum 18's independent display equipment.
- 2) By making the 3 states, enable to use 72's the PCs or A/V products maximum as DVI source at once.
- 3) And possible to cross-connect 72:18.
- 4) Each output port can be used as the Signal-Distributor.
- 5) Support Windows PLUG & PLAY function.
- 6) Variable control by the Front-Key handling or using RS232C, USB and TCP/IP(UDP) Communication.
- 7) Easy program download using ISP Interface.
- 8) Rich real-time display by 20*4 LCD and illuminated Key Type LED.
- 9) Solid 19 inch standard RACK TYPE CASE (3U).
- 10) Real time HPD observation and connecting EDID.

[Specification]

- 1) Input & Output Signal: TMDS
- 2) DVI Signal Bandwidth: Maximum 4.25Gbps(1.65Gbps in case of 1600*1200)
- 3) Resolution: VGA (640*480)~UXGA (1600x1200), 480~1080i/p
- 4) Power Supply: 110~240V/2A, 50~60Hz
- 5) Power Input: DC12V/10A
- 6) Consumption Power: Maximum inner power 24W(Maximum total 60W When connected 18's output optical cables)
- 7) Size: 484 x 240 x 264mm (W x D x H)
- 8) Weight: 11.5Kg

* All specifications are subject to change without any notice

* Note : 9:9 DVI Multiplexer is the same operating method as 18:18 DVI Multiplexer except Input/ Output port quantity and outward appearance.

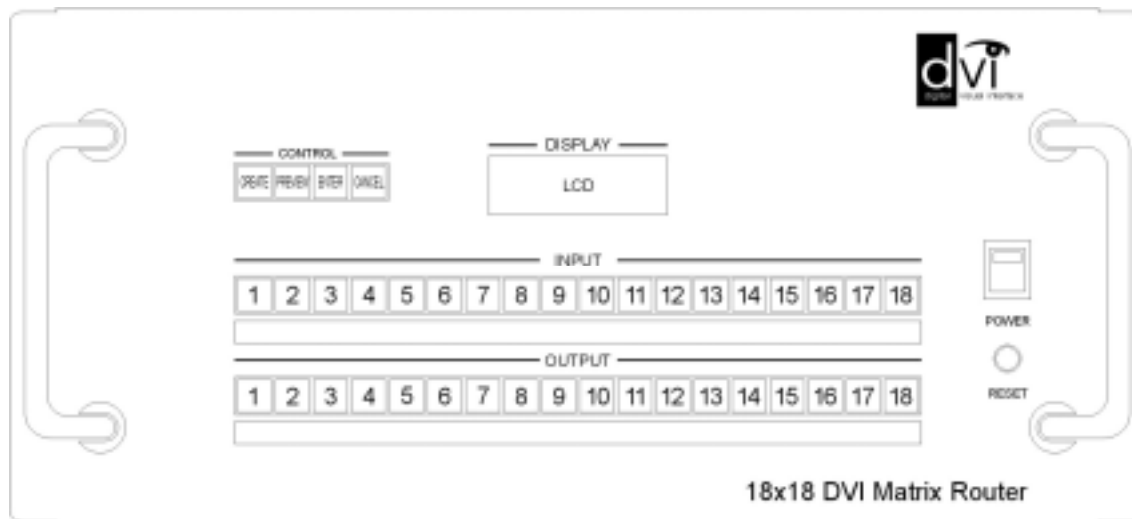
1.3 Place of equipment

- The place that temperature is maintained by 20~25 degree
- The place that humidity is inner 60%
- The place with no vibration and dust
- The place with airy environment

Chapter 2. Construction and Function

2.1 Front-Panel

- 4 control buttons: Create, Preview, Enter, Cancel
- 18's input buttons: select input channel
- 18's output buttons: select output channel
- LCD: display for Router control
- Power Switch: Router power ON/OFF
- Reset Switch: Rebooting of Router
- Handle: for moving

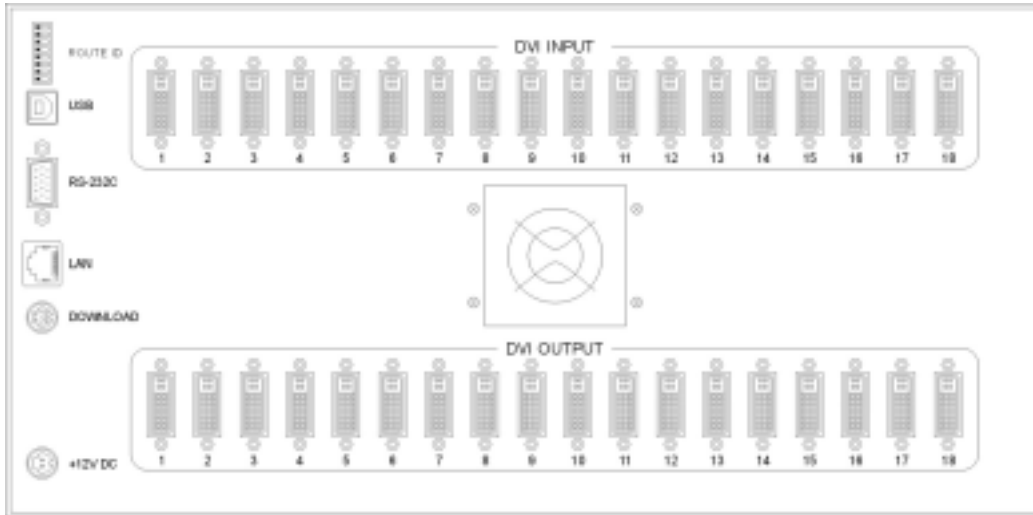


< Front view >

* All designs are subject to change without any notice

2.2 Real-Panel

- 18's DVI input Connectors
- 18's DVI output Connectors
- Dip Switch: Router ID setup
- B-Type USB Connector: Router control through USB
- 9 Pin D-Sub Connector: Router control through RS232C
- LAN Port: Router control through Ethernet
- ISP Port: Firmware Download
- Power Connector: 12V DC power input



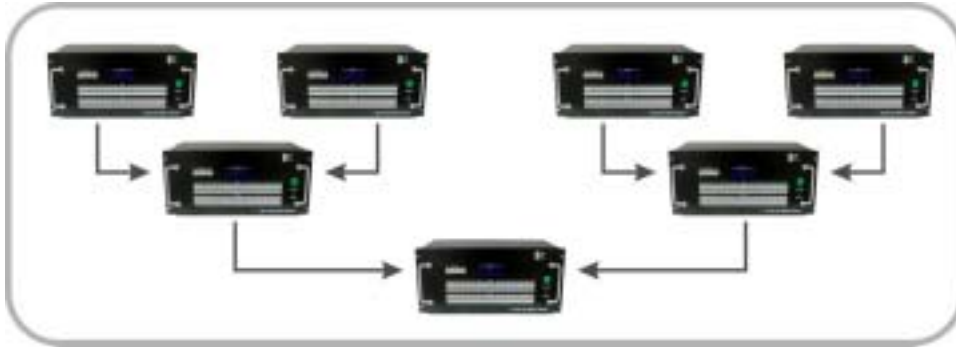
< Real view >

* All designs are subject to change without any notice

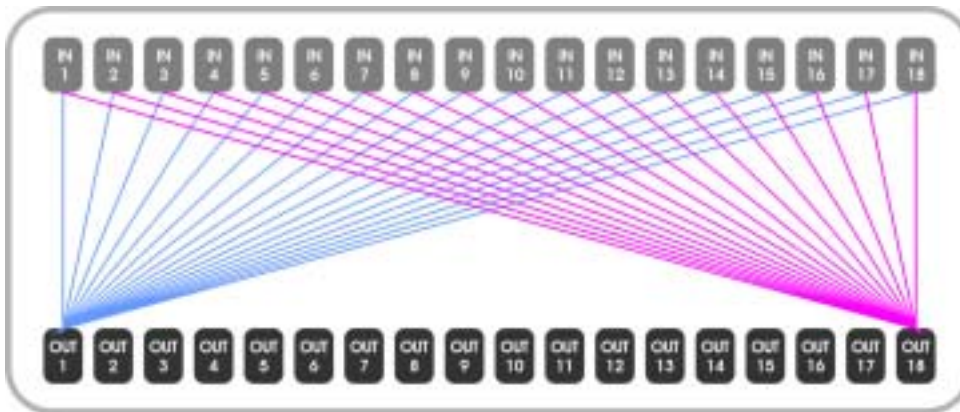
2.3 Consist of system

1) Concept of the 3-Stages Construction

- Input: 72 channels
- Output: 18 channels
- Consist of input & output: First stage: 4sets, Second stage: 2sets, Third stage: 1set
→ Connection input & output: output 1 port is connected with one among the 72's input ports.



2) Inner Connection Structure of DVI Matrix



2.4 Accessory

- RS232C, USB, UTP (Unshielded Twisted Pair) Cable
- 12V/10A Adaptor and Power Cable
- Case, CD and User's Manual



3. Setup the Router Information

3.1 Buttons for Network setup

- Using 4's Control-Buttons and 17's Input-Buttons
- Create: Network Configuration Mode
- Preview: Next Edit Mode
- Enter: Save Configuration
- Cancel: Network Configuration Escape Mode
- Input-Button 1~9 : the number 1 to 9
- Input-Button 10: the number 0
- Input-Button 11~16: the hexadecimal A to F

3.2 How to setup network

Turn on the power of equipment with pressing Create button of the Router.
 When the message, "Ethernet Configure", is come out on the Router's LCD window, set free the button and start edit.

It is just example to make it easy as below,

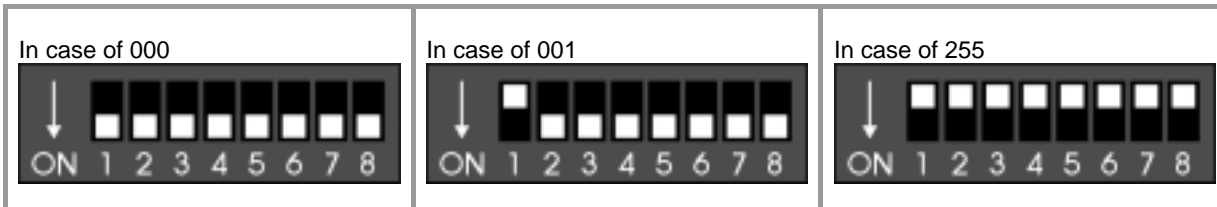
- Local IP: 125.135.199.139
- Subnet Mask: 255.255.255.128
- Gateway: 125.135.199.254
- Mac Address: 00.AA.BC.DE.1A.00
- In case of Gateway mode, push the Input-Button 1, 2, 5, 1, 3, 5, 1, 9, 9, 2, 5, 4 one by one and then push the Enter-Button, Gateway information is stored and then go to next mode. In the same way, renew to the Subnet Mask & Local IP information. In case of Mac Address mode, after pushing the Input-Button 10, 10, 11, 11, 12, 13, 14, 15, 1, 11, 10, 10 one by one and then push the enter button. If you have error during edit, push the Preview-Button and then renew the information again. After renewing all information and then push Preview-Button for confirmation that all information are correctly stored and push the Cancel button to exit network setup mode.

3.3 Setup the Router ID

Using Dip Switch, which is mounted on Real-Panel, Router is conferred the ID, which is from 000 to 255.
 When goods are going out from warehouse, all of the ID will set up as '000'.
 It can change ID from 1bit to 8bit through the control.

Refer to the below
 0 : SW ON
 1 : SW OFF

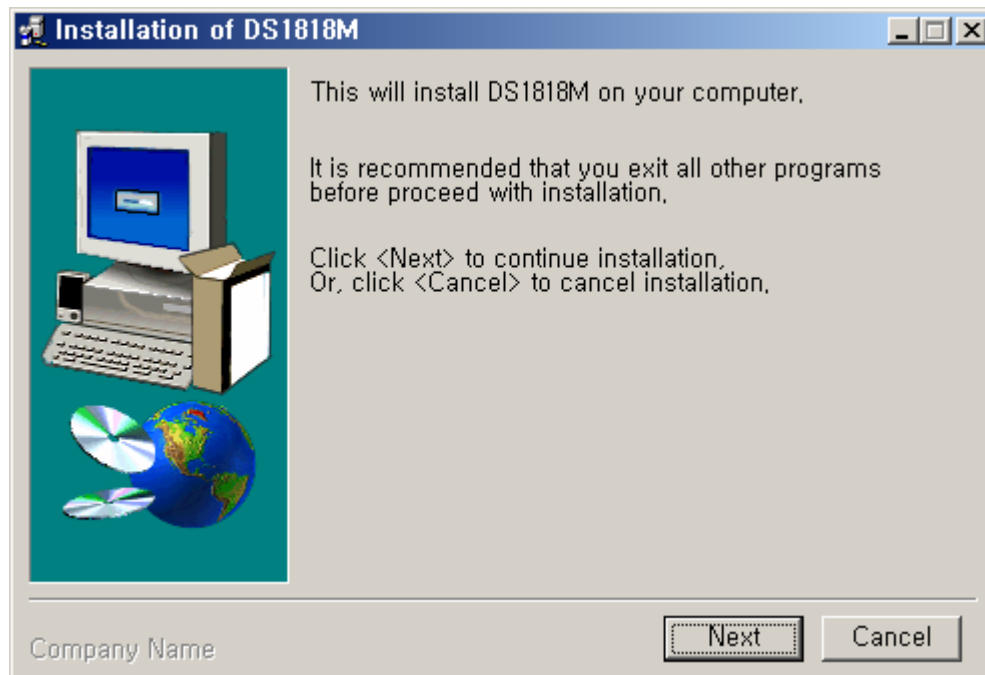
SW Number	1	2	3	4	5	6	7	8	ID
	0	0	0	0	0	0	0	0	000
	1	0	0	0	0	0	0	0	001
	0	1	0	0	0	0	0	0	002
	-	-	-	-	-	-	-	-	
	1	1	1	1	1	1	1	1	255



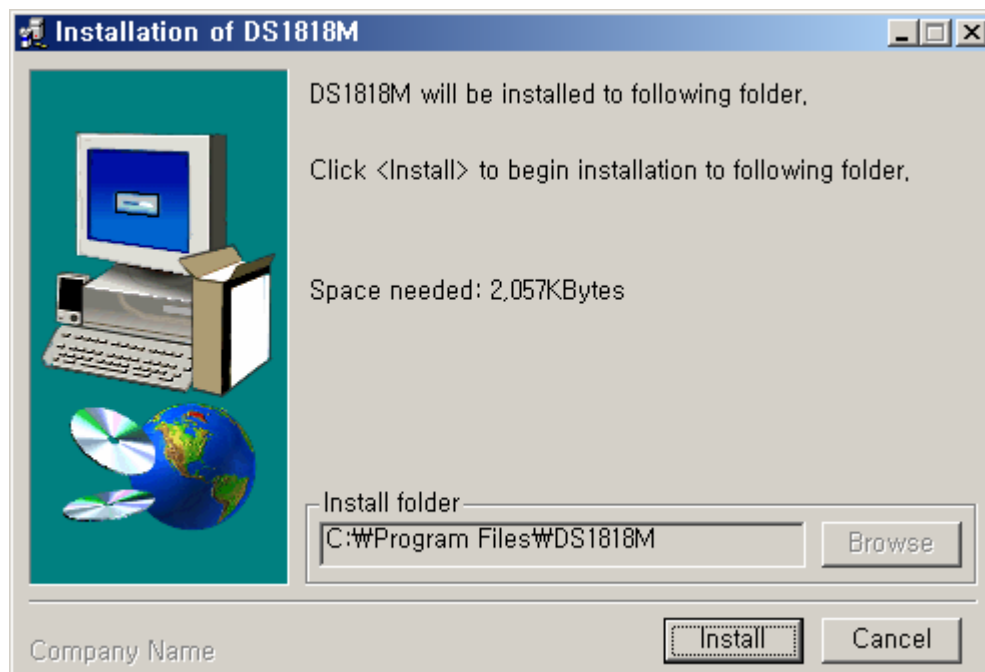
Chapter 4. Installation of ODM1818 and Connecting Communication Port

4.1 Installation of ODM1818 Application program

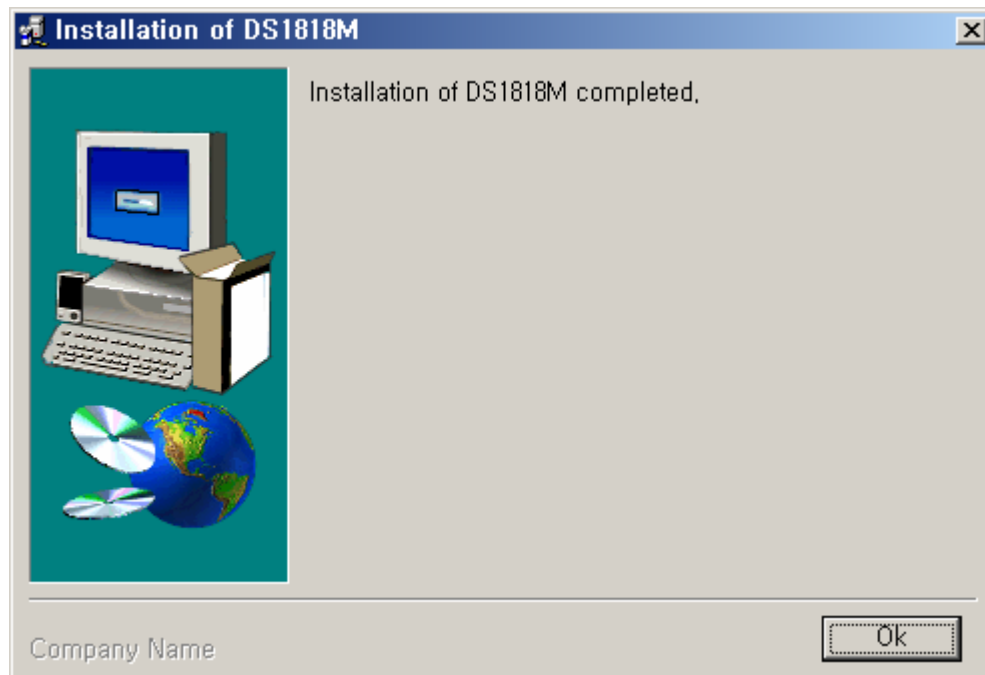
Operate 'Install.exe' which is in the install program folder from the enclosed CD.
And then push the 'Next' button.



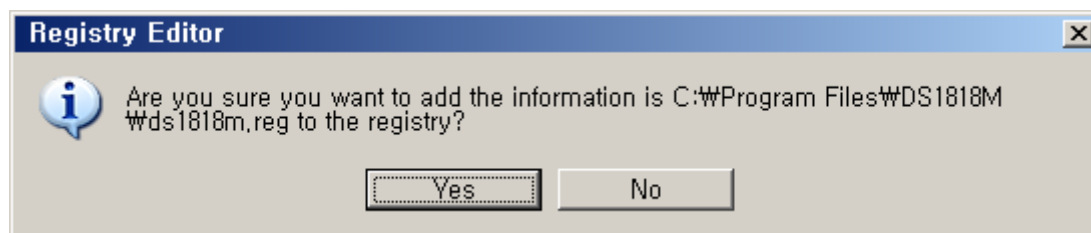
Click the 'Install' button.



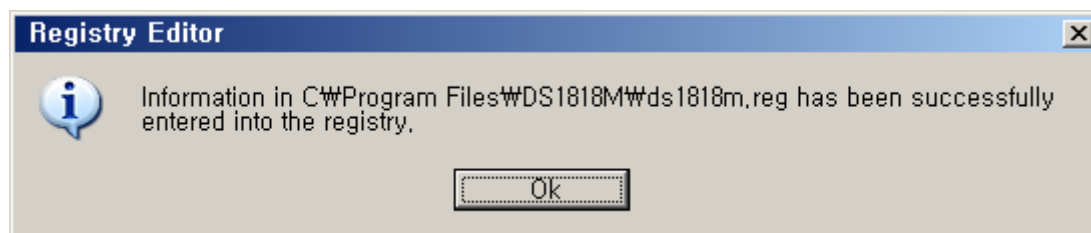
Push the 'OK' button to complete the installation.



Push the 'YES' button for adding registry.



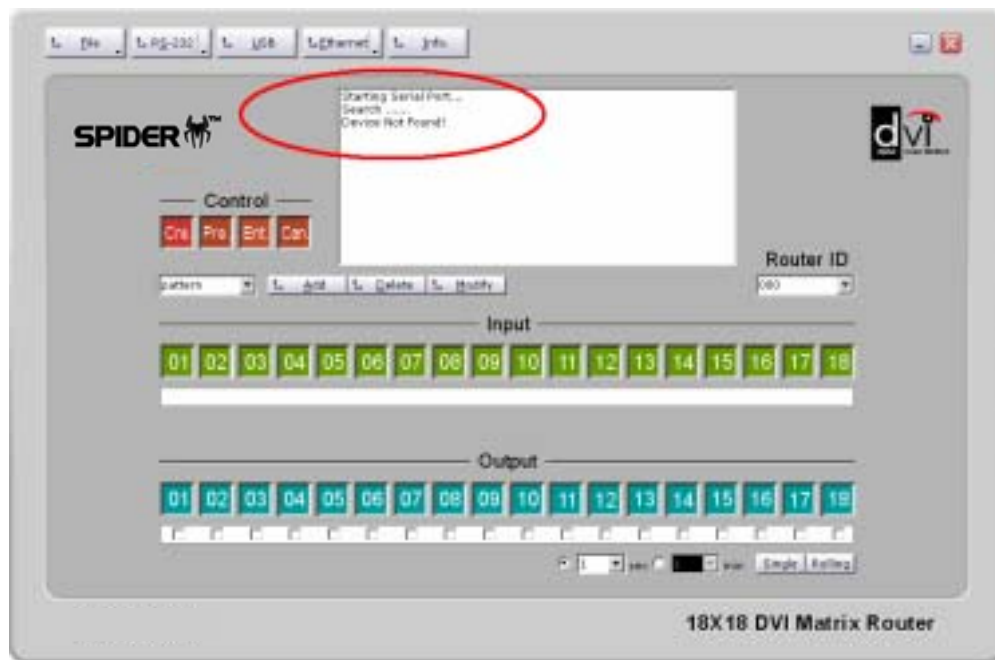
Push the 'OK' button to complete adding registry.



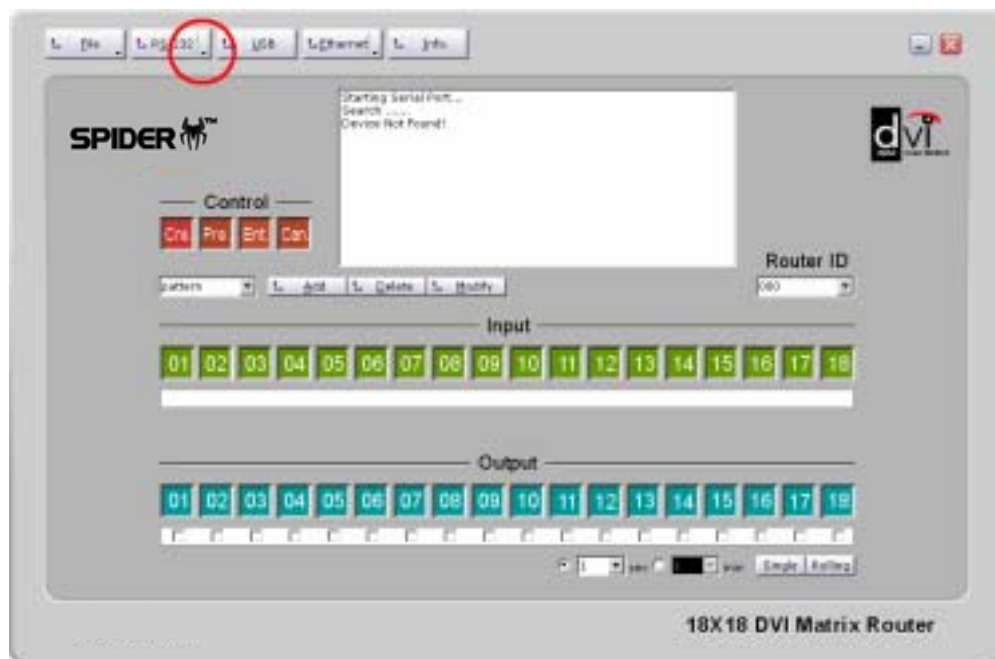
After finishing the installation, connect RS232C, USB, UTP cable to PC ports. And then turn of the Router power.

4.2 Setup the RS232C

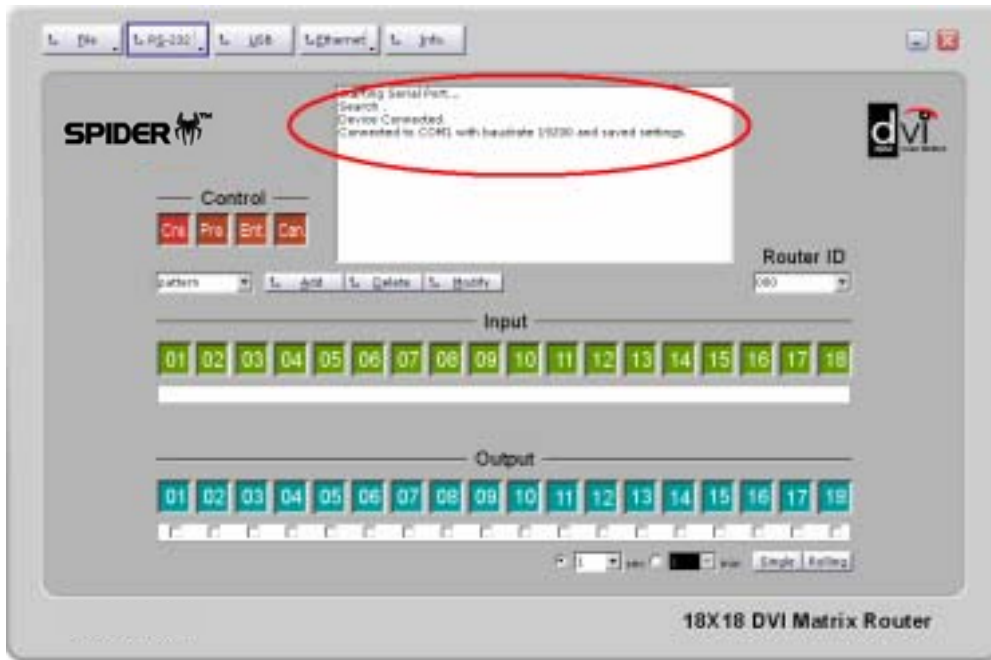
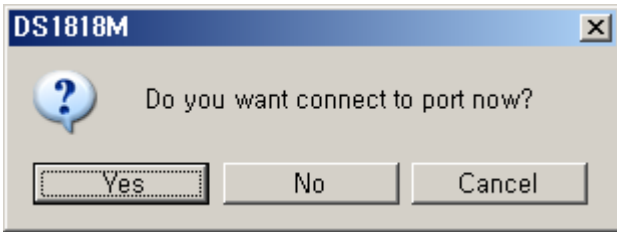
In case of wrong connection with cable or wrong setup of the COM port, the message 'Device Not Found' will be appeared on the LCD Edit-Box. At that time, check the cable connecting condition, and then go to like follow direction.



Push small Pop-Up button for setup the COM port that is being right side of the 'RS232C' button. The COM port connected to Router should be selected and Baud Rate 19200 fixed.



If you push 'OK' button, the message 'Do you want to connect to port now?' will be appeared. If you push the button 'Y', ODM1818 is connected to Router immediately.

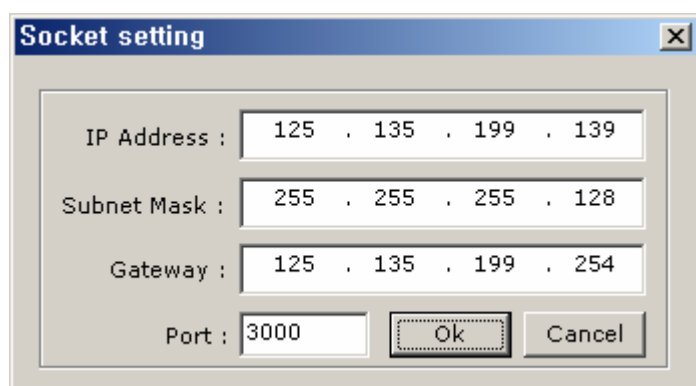
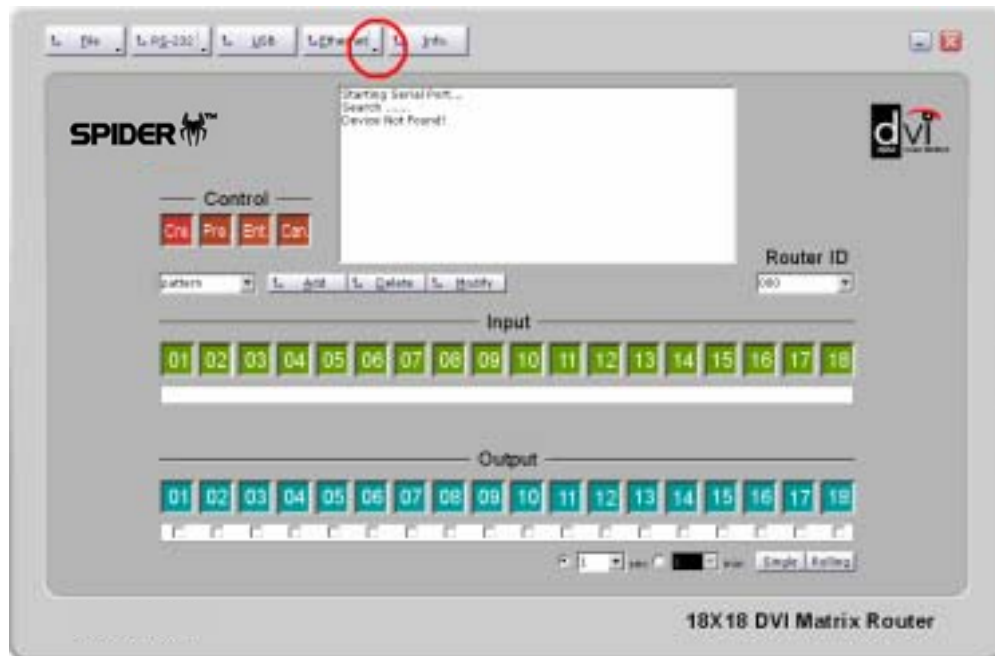


4.3 Setup the Ethernet

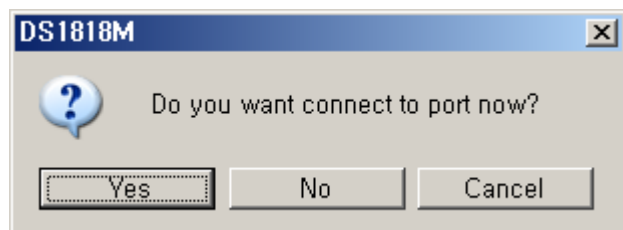
For Connecting Router through the Ethernet, there are small differences between Internet-Connection and Local-Connection.

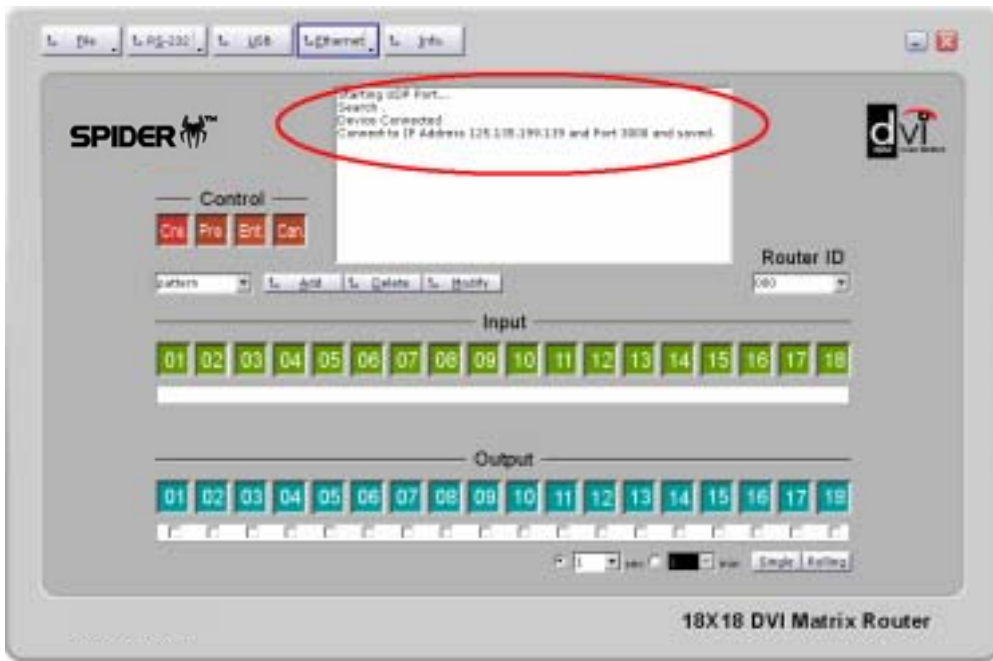
4.3.1 Internet Connection

Push small Pop-Up button for setup the Ethernet that is being right side of the 'Ethernet' button. Push the 'OK' button after filling up the network information mentioned above. Where Port value is fixed 3000.



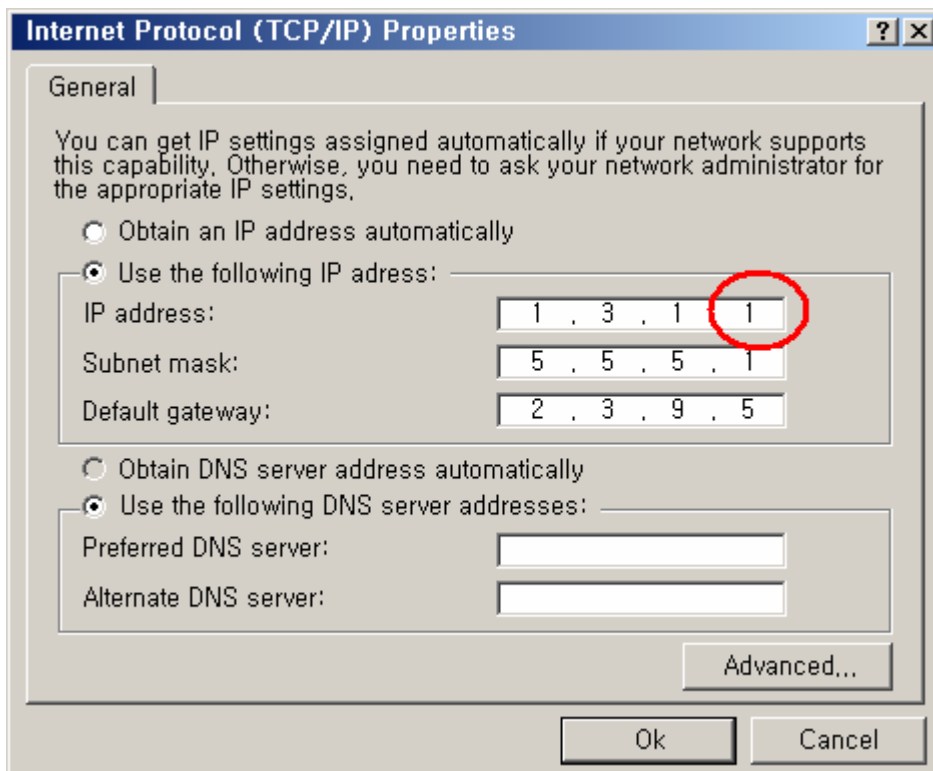
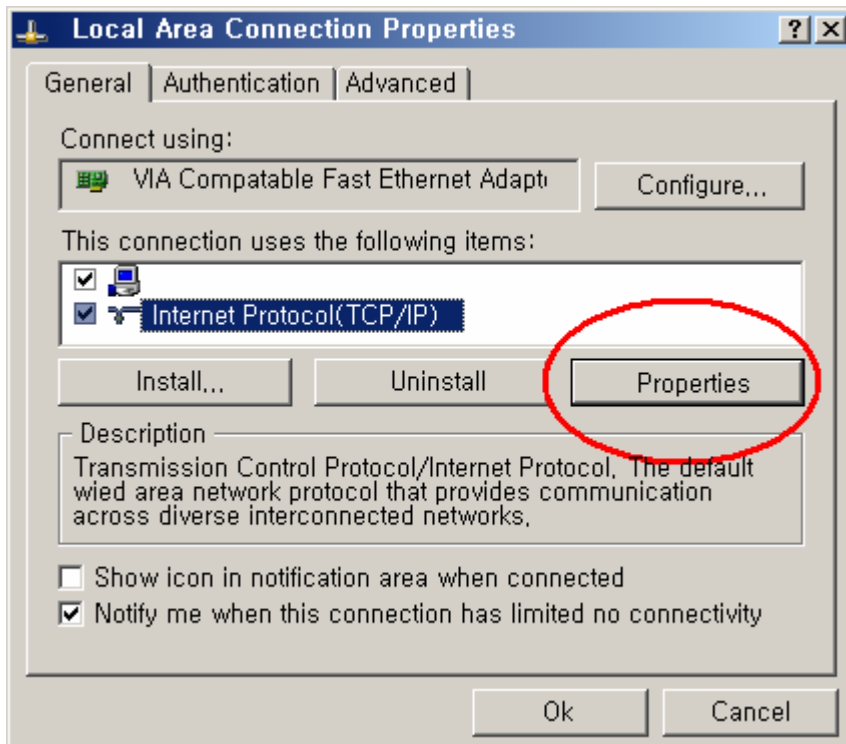
After the setup, if you push 'OK' button, the message 'Do you want to connect to port now?' will be appeared. If you push the button 'Y', ODM1818 is connected to Router immediately..





4.3.2 Local Connection

Adding the setup for the Internet Connection, select 'TCP/IP' from the user network and then push the 'Properties' button. Last value of IP must be other value and the others same. Refer to below figures.



4.4 Setup the USB Driver

You can use USB communication at the same time you connect USB cable to PC. Refer to 'Installation of the USB Driver' in Appendix.

Chapter 5. Router control

5.1 Router control through the Front-panel

Turn on the Router Power, and start control after completing Router initialize.

5.1.1 Create-Button

Function: Setup of Input-Output channel connection

Process: Create Button -> Input Button -> Output Button -> Enter Button

5.1.2 Preview

Function: Checking of Input-Output channel current connection states

Process: Preview Button -> Input Button (Single Mode),

Preview Button -> Enter Button (Auto Mode)

5.1.3 Cancel

Function: Cancellation(Disconnection) of Input-Output connection

Process: Cancel Button -> Input Button -> Enter Button

5.2 Control of Router through the ODM1818 Application Program

Turn on the Router power after checking the connection state of communication cable.

Operate ODM1818 after completing Router initialize.

When ODM1818 is operated, if setting value is regular and the connection state of communication cable is correct, the message 'connection is completed successfully' appears on the Edit-Box, and then it load up Switching-Data from Router and display Switching-Data immediately.

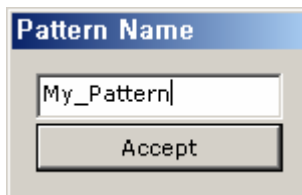
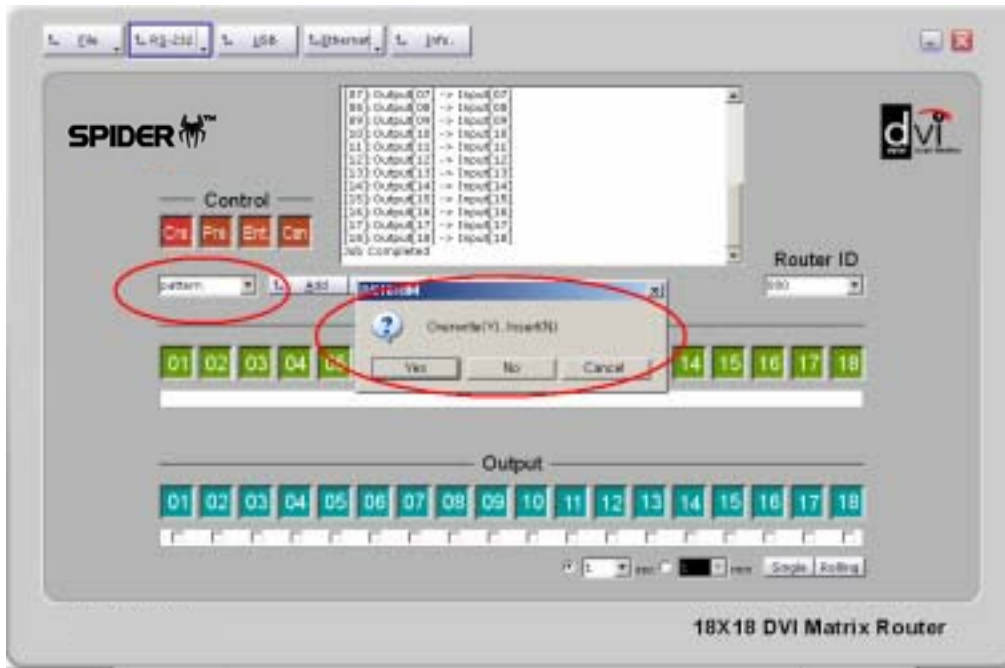
The Message-Box questioning of either overwriting of not on the current pattern showed left side, or saving as new pattern is appeared. For providing against a confusion of Switching-Data saved in the Database of PC and Router, we recommend you save as new pattern or overwriting.

If 'Overwrite (Y)' Button selected, Switching-Data of Router is overwritten on current pattern.

If 'Insert(N)' Button selected, push 'Accept' Button after write in new pattern name on the additional Edit-Box, so that the new pattern is produced.

Please push 'Accept' Button, so that the new pattern is produced.

This new pattern is able to use as Preset Function.





5.2.1 Router ID Setting

The ID of Router and ODM1818 should be matched for regular operation. The ID of ODM1818 can be changeable using Combo-Box below.



5.2.2 Control Button



1) Cre.

Function: It is the same function to Router's Create-Button and setup the Input-Output channel connection.
Process: Cre. Button -> Input Button -> Output Button -> Ent. Button

2) Pre.

Function: It is the same function to Router's Preview-Button and checking the Input-Output current connection states.
Process: Pre. Button -> Input Button (Single Mode),
Pre. Button -> Ent. Button (Auto Mode)

3) Can.

Function: It is the same function to Router's Cancel-Button and Input-Output connection cancellation(Disconnect)
Process: Can. Button -> Input Button -> Ent. Button

5.2.3 File Menu



1) Router ID Setting

When it is difficult to change Router ID owing to a long distance displacement, or you don't know ID value, if you use this function, you can control Router temporarily until the ODM1818 is terminated.

2) Download Pattern to Device

You are able to match the Switching-Data of Router and ODM1818 just at one time by transmitting down current that to Router.

3) Upload Pattern to Device

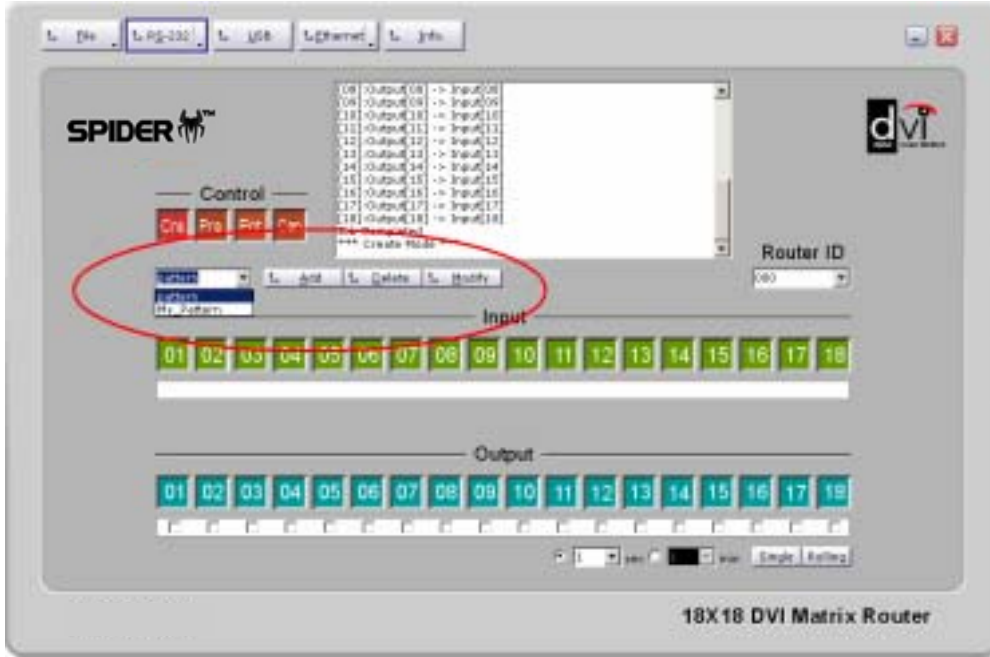
You are able to match the Switching-Data of Router and ODM1818 just at one time by transmitting up current that to PC.

4) Exit

Terminating the Application Program, ODM1818.

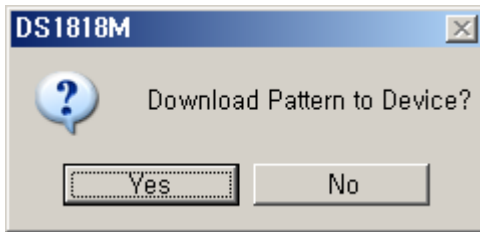
5.2.4 Pattern Edit (Preset)

It is able to use as Preset Function after modifying or pre-organization the pattern.



1) Pattern Add

Please push "ADD Button" after writing in the name of applicable pattern in the Combo-Box. The new pattern is produced. At that time, the switching connection state becomes 1:1 Direct Through Connection, and then you are able to download newly produced pattern to Router at the same time.



2) Pattern Modify

Please vary the name after selecting the pattern to be modified pattern in the Combo-Box. And then push the "Modify" button.

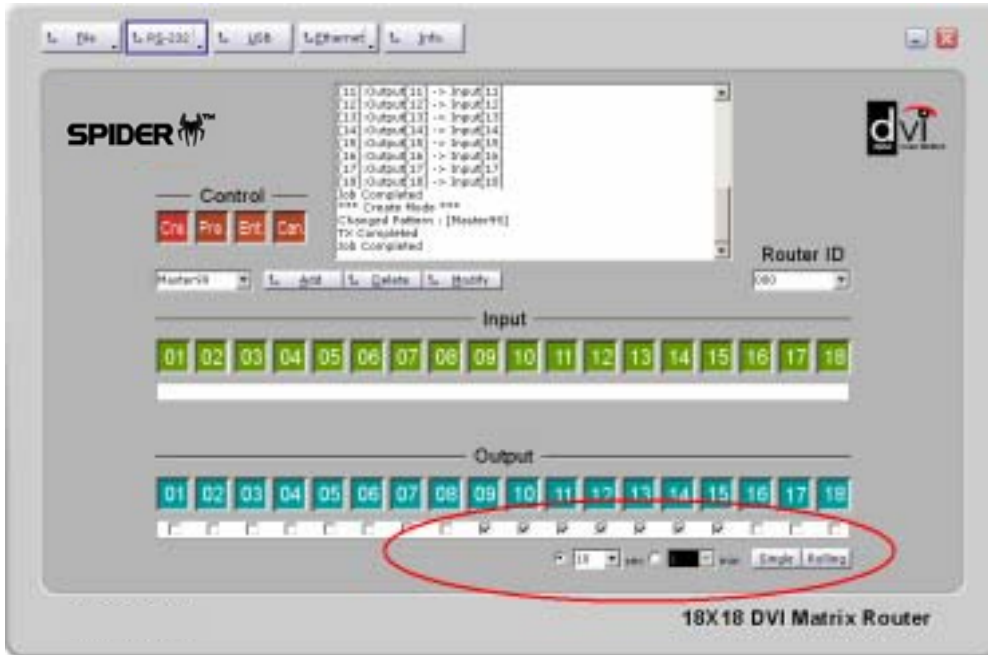
3) Pattern Delete

Please select pattern to be deleted in the Combo-Box. And then push the "Delete" Button.

5.2.5 Rolling Function

You are able to display input sources repeatedly through the output ports according to the setting time. You can select output channels to be rolled using the Check-Box. If output channel does not connect to any input channel, Check-Box would not be checked.

And output channel should be over 2 at least. Although the Rolling is stopped, pre-saved Switching Data is not affected.



For example, output channel is connected on shifts about the fixed input depends on setting time. Like this,

Form: Input Channel -> Output channel

1->1	5->1	4->1	3->1	2->1	1->1
2->2	1->2	5->2	4->2	3->2	2->2
3->3	2->3	1->3	5->3	4->3	3->3
4->4	3->4	2->4	1->4	5->4	4->4
5->5	4->5	3->5	2->5	1->5	5->5

At this time, the LED Output Button that is connected one Input Button of the lowest of Router starts operation. At this time, the lowest an input button and an output button related the input are lighted repeatedly.

1) Single Rolling

- Please select repetition time and output channels. And then push the 'Single' Button.
- The image is produced repeatedly according to the setting time from first to end of selected output channel.
- It finishes 'Rolling' automatically. The output image goes back to first state.
- While the Rolling is operating, if you push the 'Stop' Button, the Rolling is stopped.
- And output image keeps on current state.

2) Unlimited Rolling

The Rolling is repeated continuously until the user pushes the 'Stop' Button.

If you push the "stop" Button, at that time the output image keeps going and it is not affected to pre-saved data.

If you would like to go back previous output states, please select the left pattern again.

[Appendix]

A. Command-Set and Sample Code for User

- Communication codes are applied to every RS232C, USB, Ethernet samely.

1. Windows to Router

Command Set (1 Packet)

Components		Value	Description	Bytes
Start		0x02	Header Code	1
Router ID		Variable	Router ID Value	3
Command	Create	0x30	Create Mode	1
	Preview	0x31	Preview Mode	
	Cancel	0x32	Cancel Mode	
	Upload Data	0x33	Switching Data Upload	
	Rolling	0x34	Rolling Mode	
	Router ID	0x35	Router ID Upload	
	Rolling Stop	0x36	Rolling Stop	
Connection	0x37	Router Connection Check		
Length		Variable	Output Ch + Input Ch	2
Output Ch		Variable	Selected Output Ch	2
Input Ch		Variable	Selected Input Ch	2
End		0x03	Tail Code	1

2. Route to Windows

2.1 ACK

Error: 0x05

RX Complete: 0x06

Job Complete: 0x07

Connection OK: 0xA0

2.2 Command Set (1Packet)

Components		Value	Description	Bytes
Start		0x02	Header Code	1
Router ID		Variable	Router ID Value	3
Command	Upload Data	0x33	Switching Data Upload	1
	Router ID	0x35	Router ID Upload	
Length		Variable	Output Ch + Input Ch	2
Output Ch		Variable	Selected Output Ch	2
Input Ch		Variable	Selected Input Ch	2
End		0x03	Tail Code	1

3. Additional Description

3.1 Router ID

- It can be changed by using Dip Switch that is located Rear-Panel of Router and it has values from 000 to 255.
- During the communication, transmitted 3bytes composed of '0', '0', '0' ~ '2', '5', '5'.

3.2 Length

- The length of real data from 00 to 72.
- During the communication, transmitted 2bytes composed of '0', '0' ~ '7', '2'.

3.3 Output Ch

- It means selected output channel from 01 to 18.
- During the communication, transmitted 2bytes composed of '0', '1' ~ '1', '8'.

3.4 Input Ch

- It means selected input channel from 01 to 18.
- During the communication, transmitted 2bytes composed of '0', '1' ~ '1', '8'.

3.5 ACK: Error

- During the communication, if Router receives irregular data packet, the message is sent from equipment to windows.

3.6 ACK: RX Complete

- During the communication, if Router receives regular data packet, the message is sent from equipment to windows.

3.7 ACK: Job Complete

- After completing the mission, the message is sent from equipment to windows.

3.8 ACK: Connection OK

- When the connection becomes successfully between equipment and windows program, the message is sent from equipment to windows.

4. Example Code

- All Codes are based on Visual C++ and ASCII Code.

4.1 Create

1) For 1 Channel Connect: Output Ch1 -> Input Ch1

```
unsigned char TX_BUF[100];
memset(TX_BUF, 0, 100);
TX_BUF[0] = 0x02; // Start Code.
TX_BUF[1] = 0x30; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30; // '0'
TX_BUF[3] = 0x30; // '0'
TX_BUF[4] = 0x30; // Command Code : Create Mode.
TX_BUF[5] = 0x30; // '0', Data Length in case of 4bytes(Output 2bytes+Input 2bytes).
TX_BUF[6] = 0x34; // '4'
TX_BUF[7] = 0x30; // '0', Output Ch1(01). Ten's Position.
TX_BUF[8] = 0x31; // '1', One's Position.
TX_BUF[9] = 0x30; // '0', Input Ch1(01). Ten's Position.
TX_BUF[10] = 0x31; // '1', One's Position.
TX_BUF[11] = 0x03; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)); //User's Routine.
```

2) For 1 Channel Disconnect : Output Ch1 -> Disconnect

```
unsigned char TX_BUF[100];
memset(TX_BUF, 0, 100);
TX_BUF[0] = 0x02; // Start Code.
TX_BUF[1] = 0x30; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30; // '0'
TX_BUF[3] = 0x30; // '0'
TX_BUF[4] = 0x30; // Command Code : Create Mode.
TX_BUF[5] = 0x30; // '0', Data Length in case of 4bytes(Output 2bytes+Input 2bytes).
TX_BUF[6] = 0x34; // '4'
TX_BUF[7] = 0x30; // '0', Output Ch1(01).
TX_BUF[8] = 0x31; // '1'
TX_BUF[9] = 0x30; // '0', Disconnect(00).
TX_BUF[10] = 0x31; // '0'
TX_BUF[11] = 0x03; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)); //User's Routine.
```

3) For 2 Channels Connect : Output Ch1 -> Input Ch18 and Output Ch18 -> Input Ch1

```
unsigned char TX_BUF[100];
memset(TX_BUF, 0, 100);
TX_BUF[0] = 0x02; // Start Code.
TX_BUF[1] = 0x30; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30; // '0'
TX_BUF[3] = 0x30; // '0'
TX_BUF[4] = 0x30; // Command Code : Create Mode.
TX_BUF[5] = 0x30; // '0', Data Length in case of 8bytes(Output 4bytes+Input 4bytes).
TX_BUF[6] = 0x38; // '8'
TX_BUF[7] = 0x30; // '0', Output Ch1(01)
TX_BUF[8] = 0x31; // '1'
TX_BUF[9] = 0x31; // '1', Input Ch18(18)
TX_BUF[10] = 0x38; // '8'
TX_BUF[11] = 0x31; // '1', Output Ch(18)
TX_BUF[12] = 0x38; // '8',
TX_BUF[13] = 0x30; // '0', Input Ch1(01)
TX_BUF[14] = 0x31; // '1'
TX_BUF[15] = 0x03; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)); //User's Routine.
```

4) For 18Channels Direct-Through Connection

```
int i, count = 7 ;
unsigned char TX_BUF[100] ;
memset(TX_BUF, 0, 100) ;
TX_BUF[0] = 0x02 ; // Start Code.
TX_BUF[1] = 0x30 ; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30 ; // '0'
TX_BUF[3] = 0x30 ; // '0'
TX_BUF[4] = 0x30 ; // Command Code : Create Mode.
TX_BUF[5] = 0x37 ; // '7', Length in case of 72bytes(Output 36bytes+Input 36bytes).
TX_BUF[6] = 0x32 ; // '2'
for(i=1 ; i<=18 ; i++)
{
TX_BUF[count] = i/10 + 0x30 ; count++ ; // Output Ch. Ten's Position.
TX_BUF[count] = i%10 + 0x30 ; count++ ; // One's Position.
TX_BUF[count] = i/10 + 0x30 ; count++ ; // Input Ch. Ten's Position.
TX_BUF[count] = i%10 + 0x30 ; count++ ; // One's Position.
}
TX_BUF[count] = 0x03 ; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)) ; //User's Routine.
```

4.2 Preview (Auto Mode)

```
unsigned char TX_BUF[100] ;
memset(TX_BUF, 0, 100) ;
TX_BUF[0] = 0x02 ; // Start Code.
TX_BUF[1] = 0x30 ; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30 ; // '0'
TX_BUF[3] = 0x30 ; // '0'
TX_BUF[4] = 0x31 ; // Command Code : Preview Mode.
TX_BUF[5] = 0x37 ; // '0', Data Length.
TX_BUF[6] = 0x32 ; // '0'
TX_BUF[7] = 0x03 ; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)) ; //User's Routine.
```

4.3 Cancel

```
unsigned char TX_BUF[100] ;
memset(TX_BUF, 0, 100) ;
TX_BUF[0] = 0x02 ; // Start Code.
TX_BUF[1] = 0x30 ; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30 ; // '0'
TX_BUF[3] = 0x30 ; // '0'
TX_BUF[4] = 0x32 ; // Command Code : Cancel Mode.
TX_BUF[5] = 0x30 ; // '0', Data Length in case of 2bytes(Input 2bytes).
TX_BUF[6] = 0x32 ; // '2'
TX_BUF[7] = 0x30 ; // '0', Input Ch to be cancelled(in case of Ch1).
TX_BUF[8] = 0x31 ; // '1'
TX_BUF[9] = 0x03 ; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)) ; //User's Routine.
```

4.4 Upload Data Request

```
unsigned char TX_BUF[100] ;
memset(TX_BUF, 0, 100) ;
TX_BUF[0] = 0x02 ; // Start Code.
TX_BUF[1] = 0x30 ; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30 ; // '0'
TX_BUF[3] = 0x30 ; // '0'
TX_BUF[4] = 0x33 ; // Command Code : Switching Data Upload.
TX_BUF[5] = 0x30 ; // '0', Data Length.
TX_BUF[6] = 0x30 ; // '0'
TX_BUF[7] = 0x03 ; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)) ; //User's Routine.
```

4.5 Rolling

```
- For 3Channels Output and 5sec delay.
- For Output1 -> Input1, Output2 -> Input2, Output3 -> Input3
SetTimer(1, 5000, NULL) ; // Start Timer.
void XXX::OnTimer(UINT nIDEvent)
{
unsigned char TX_BUF[100] ;
memset(TX_BUF, 0, 100) ;
TX_BUF[0] = 0x02 ; // Start Code.
TX_BUF[1] = 0x30 ; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30 ; // '0'
TX_BUF[3] = 0x30 ; // '0'
TX_BUF[4] = 0x34 ; // Command Code : Rolling.
int selected_chs = 3 ;
int size = selected_chs*4 ; //4bytes per 1 Output, Input Ch set.
char* output_ch = new char [selected_chs] ;
char* input_ch = new char [selected_chs] ;
TX_BUF[5] = (size-size%10)/10 + 0x30 ; //Data Length. Ten's Position.
size = size%10 ;
TX_BUF[6] = size + 0x30 ; //One's Position.
BOOL m_bRolling = TRUE ; //Parameter to be controlled..
while(m_bRolling)
{
for(int i=selected_chs ; i>0 ; i--)
{
int count = 7 ;
unsigned char temp ;
for(int j=0 ; j<selected_chs ; j++) // Make 1 Packet.
{
temp = output_ch[(i+j)%size] ;
TX_BUF[count] = (temp-temp%10)/10 + 0x30 ; count++ ; //Output
temp = temp%10 ;
TX_BUF[count] = temp + 0x30 ; count++ ;
temp = input_ch[j] ;
TX_BUF[count] = (temp-temp%10)/10 + 0x30 ; count++ ; //Input
temp = temp%10 ;
TX_BUF[count] = temp + 0x30 ; count++ ;
}
TX_BUF[count] = 0x03 ; //End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)) ;
}
}
delete [] output_ch ;
delete [] input_ch ;
KillTimer(1) ;
}
```

4.6 Upload Router ID

```
unsigned char TX_BUF[100] ;
memset(TX_BUF, 0, 100) ;
TX_BUF[0] = 0x02 ; // Start Code
TX_BUF[1] = 0x30 ; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30 ; // '0'
TX_BUF[3] = 0x30 ; // '0'
TX_BUF[4] = 0x35 ; // Command Code : Router ID Upload.
TX_BUF[5] = 0x30 ; // '0', Data Length.
TX_BUF[6] = 0x30 ; // '0'
TX_BUF[7] = 0x03 ; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)) ; //User's Routine.
```

4.7 Rolling Stop

```
unsigned char TX_BUF[100];
memset(TX_BUF, 0, 100);
TX_BUF[0] = 0x02; // Start Code.
TX_BUF[1] = 0x30; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30; // '0'
TX_BUF[3] = 0x30; // '0'
TX_BUF[4] = 0x36; // Command Code : Rolling Stop.
TX_BUF[5] = 0x30; // '0', Data Length.
TX_BUF[6] = 0x30; // '0'
TX_BUF[7] = 0x03; // End Code.
TransmissionData((char*)TX_BUF, strlen((const char*)TX_BUF)); //User's Routine.
```

4.8 Connection Check

```
unsigned char TX_BUF[100];
memset(TX_BUF, 0, 100);
TX_BUF[0] = 0x02; // Start Code
TX_BUF[1] = 0x30; // '0', In case of Router ID [000].
TX_BUF[2] = 0x30; // '0'
TX_BUF[3] = 0x30; // '0'
TX_BUF[4] = 0x37; // Command Code : Connection Check.
TX_BUF[5] = 0x30; // '0', Data Length.
TX_BUF[6] = 0x30; // '0'
TX_BUF[7] = 0x03; // End Code.
Transmission Data((char*)TX_BUF, strlen((const char*)TX_BUF)); //User's Routine.
```

B. Tip for EDID Connection

The router checks switching data and HPD of output way every 50ms to read the Monitor information of output way.

If it has any problems, it becomes EDID connection statement.

If the output that's connected one input has lots cases, the Router makes connection between input and EDID information of the monitor that's connected the lowest Channel.

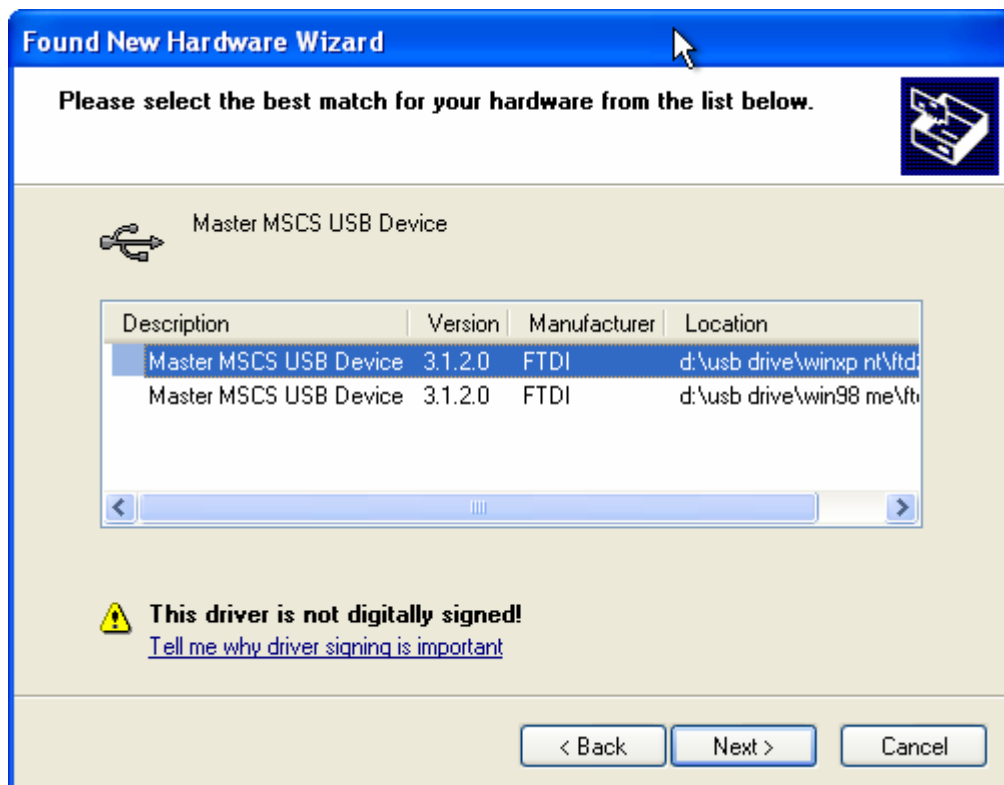
C. Installation of USB Driver

Windows XP

- Please turn on the Router Power after connecting USB Cable on the PC and the Router.
 - Please push the "NEXT" button after selection like below.
- It starts installation.



- Insert enclosed CD into the CD-ROM and select the searching Location and push the "NEXT" button like this



Please push the "Continue Anyway" Button, if you want to keep going continue, but want to stop, just push the "STOP Installation" button.

Hardware Installation



The software you are installing for this hardware:

Master MSCS USB Device

has not passed Windows Logo testing to verify its compatibility with Windows XP. ([Tell me why this testing is important.](#))

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

Found New Hardware Wizard

Please wait while the wizard installs the software...

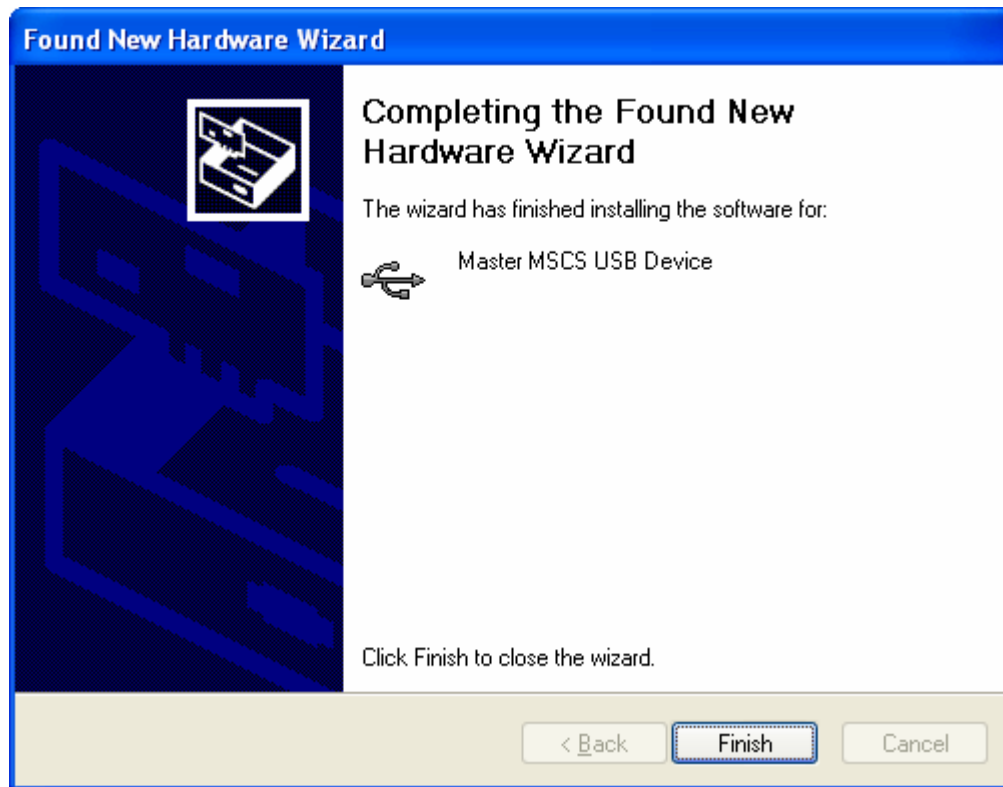


Master MSCS USB Device



Setting a system restore point and backing up old files in case your system needs to be restored in the future.

- Please complete the installation as push the "FINISH" button.

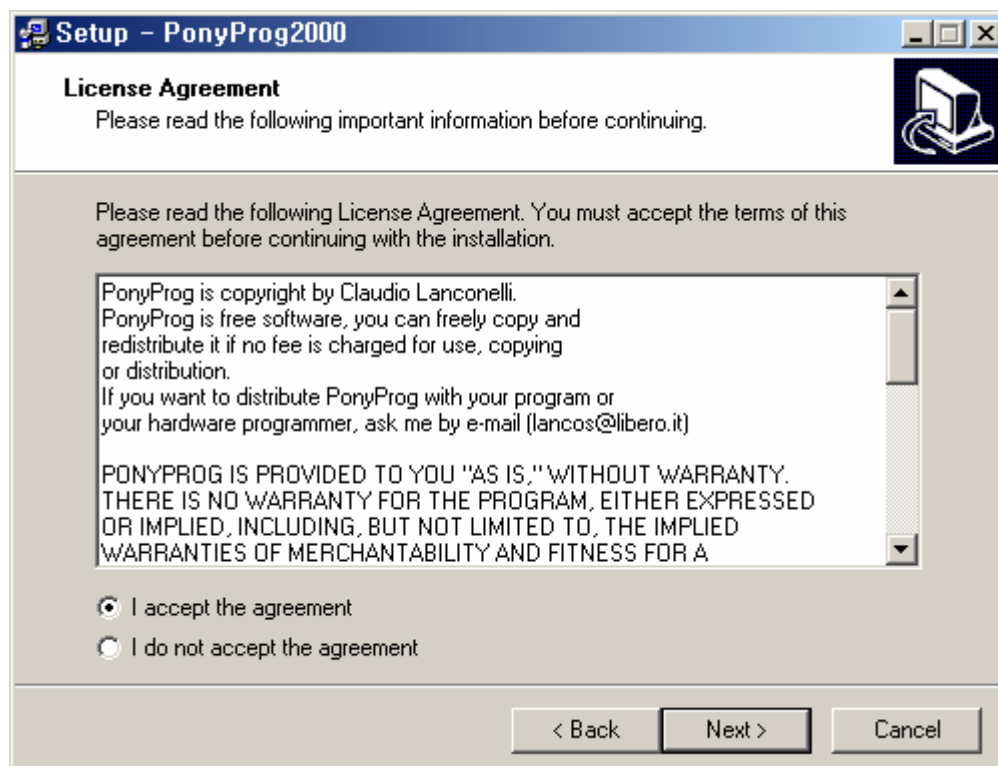
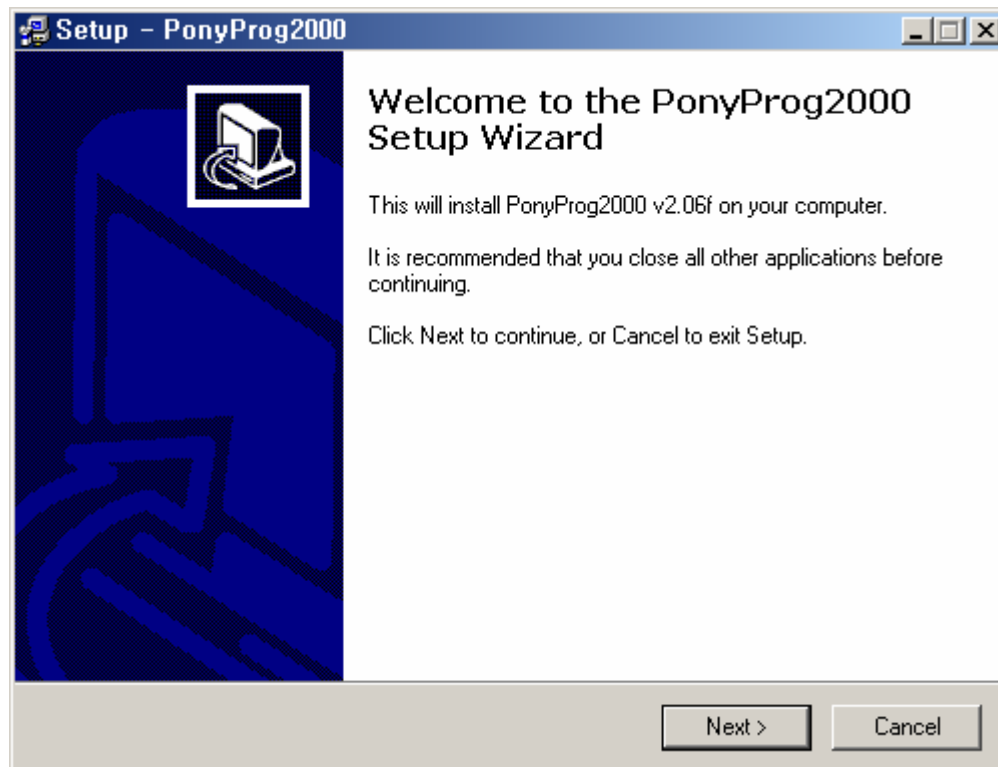


* Window O/S program: Windows XP/ 98/ 2000/ ME

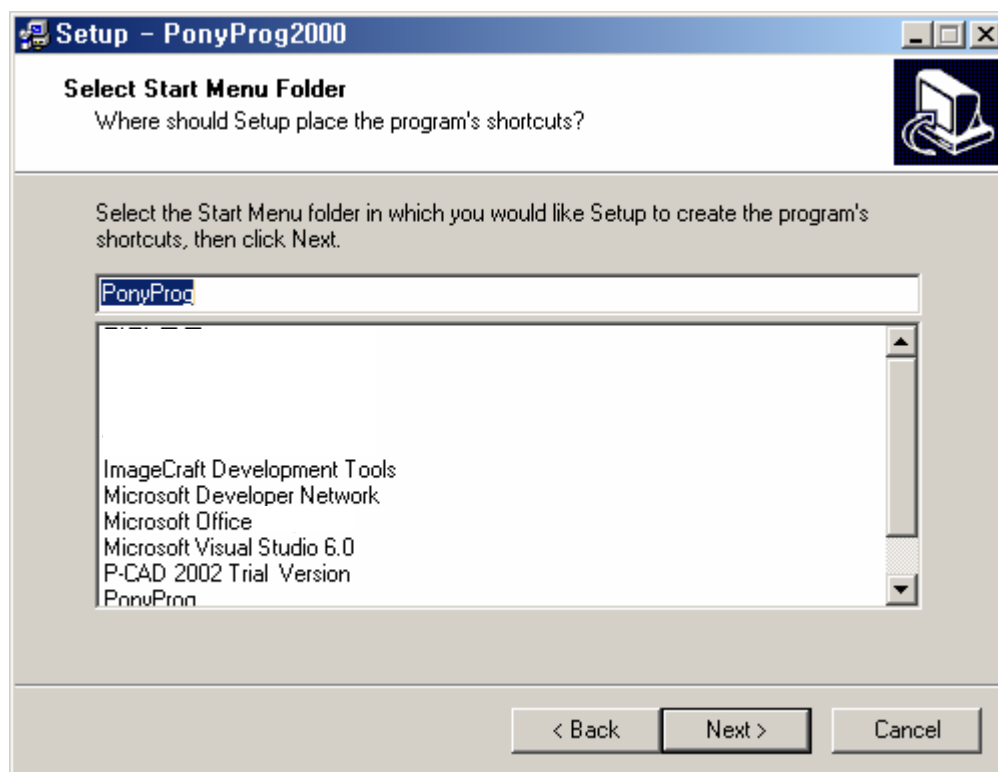
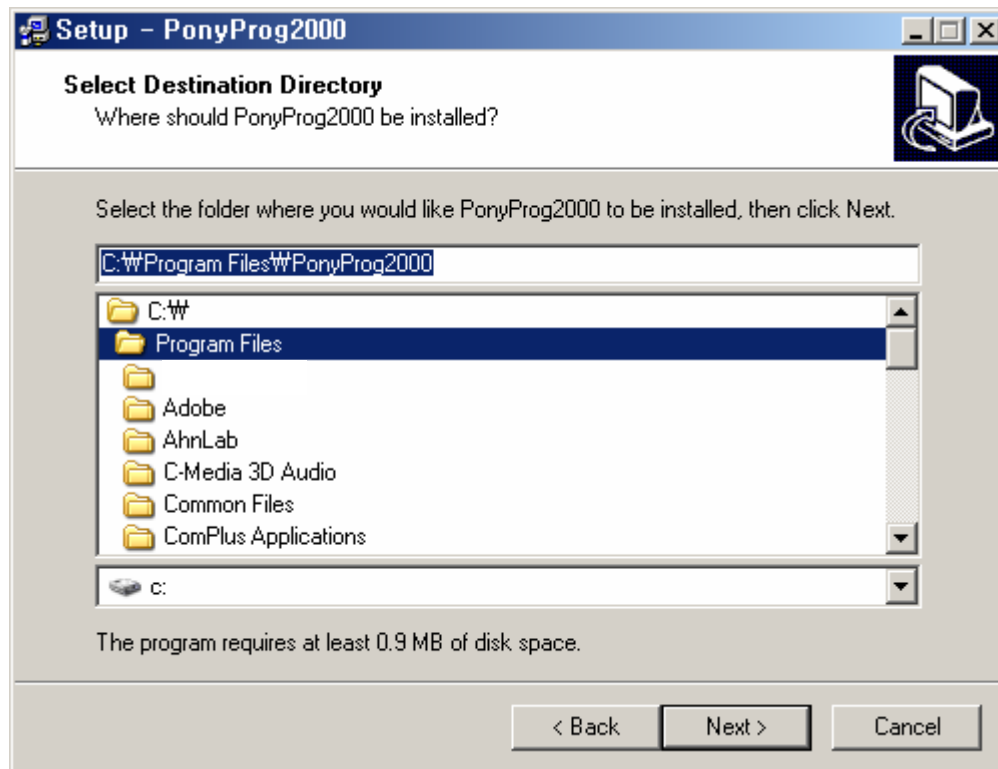
D. Installation of the Ponyprog2000

1. Installation of ISP Downloader, PonyProg2000

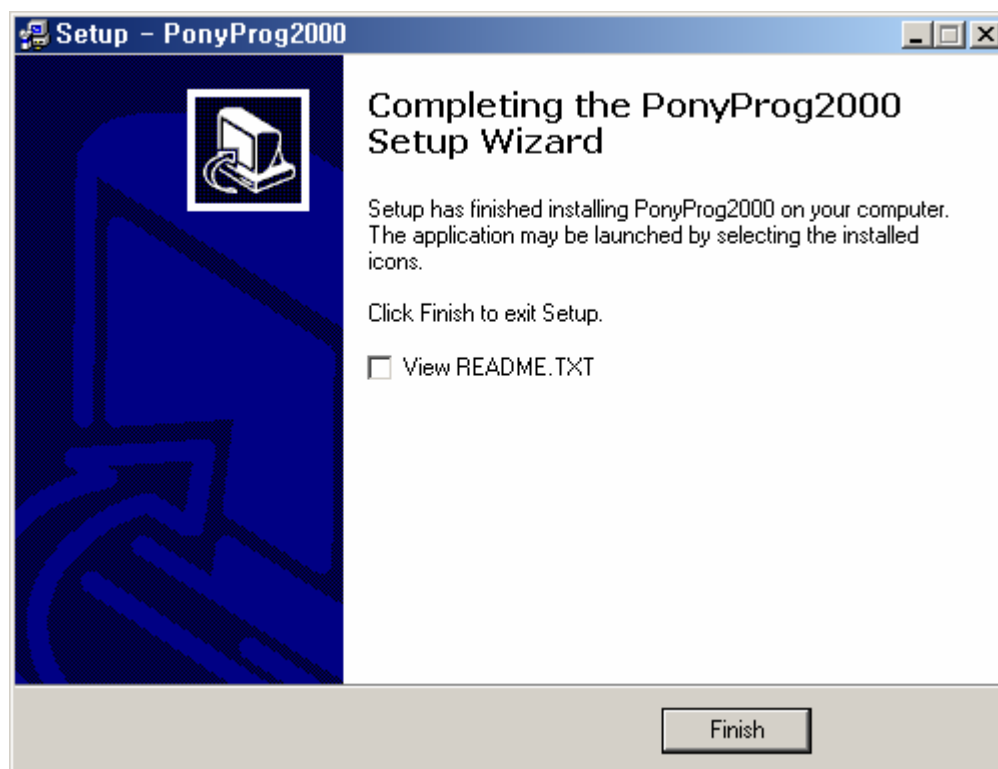
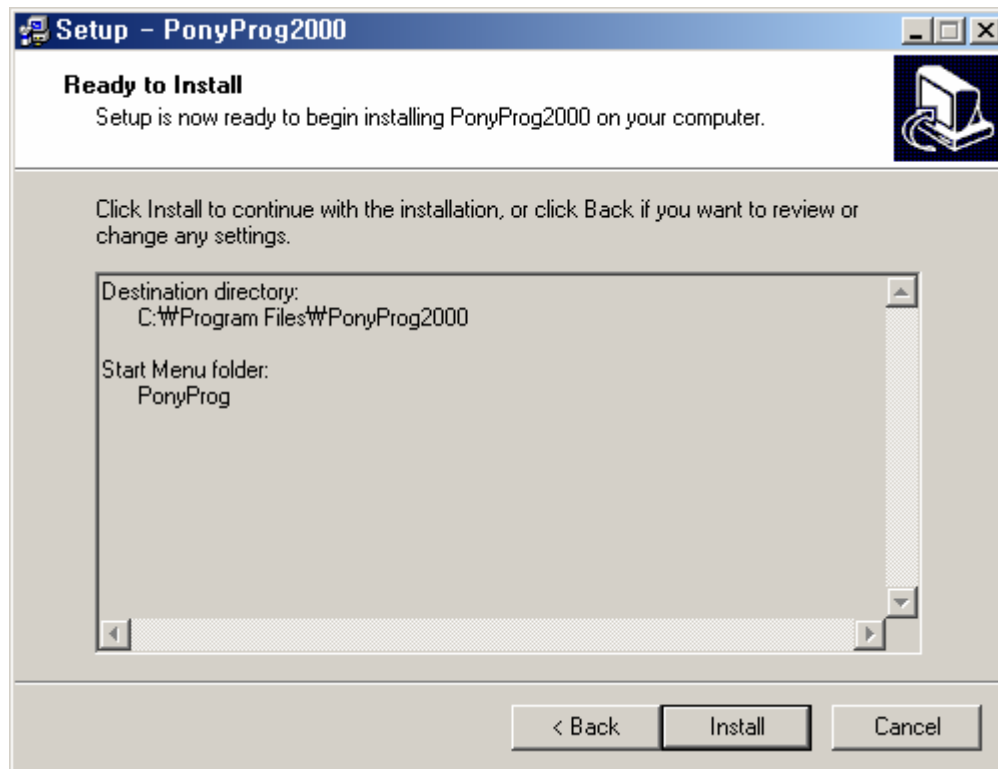
From the enclosed 'CD', put 'setup.exe' into practice from the download folder. Push the 'next' button and launch installment.



After deciding on a installation route, push the 'next' button.



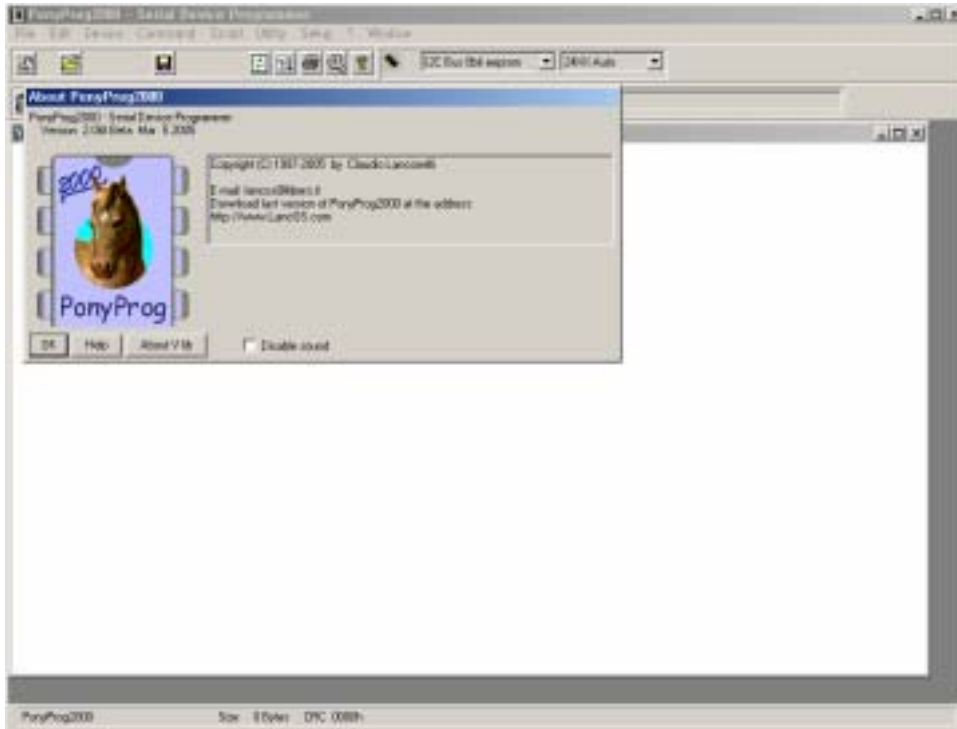
And then finish the installment when you push the 'install' button.



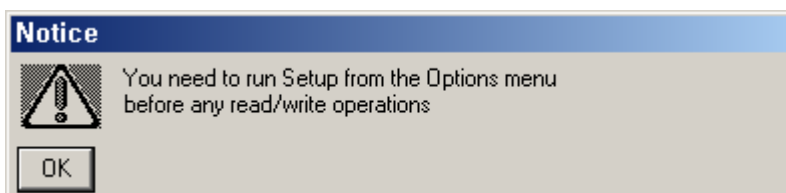
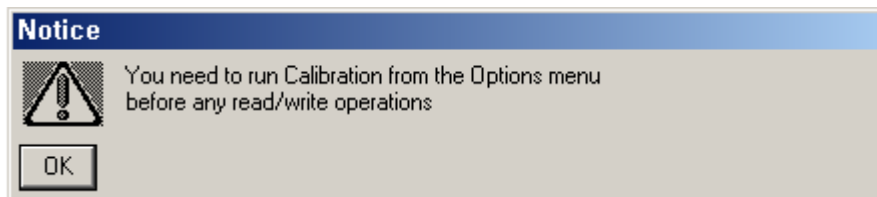
2. Download of Firmware

Switch on the 'Router'.

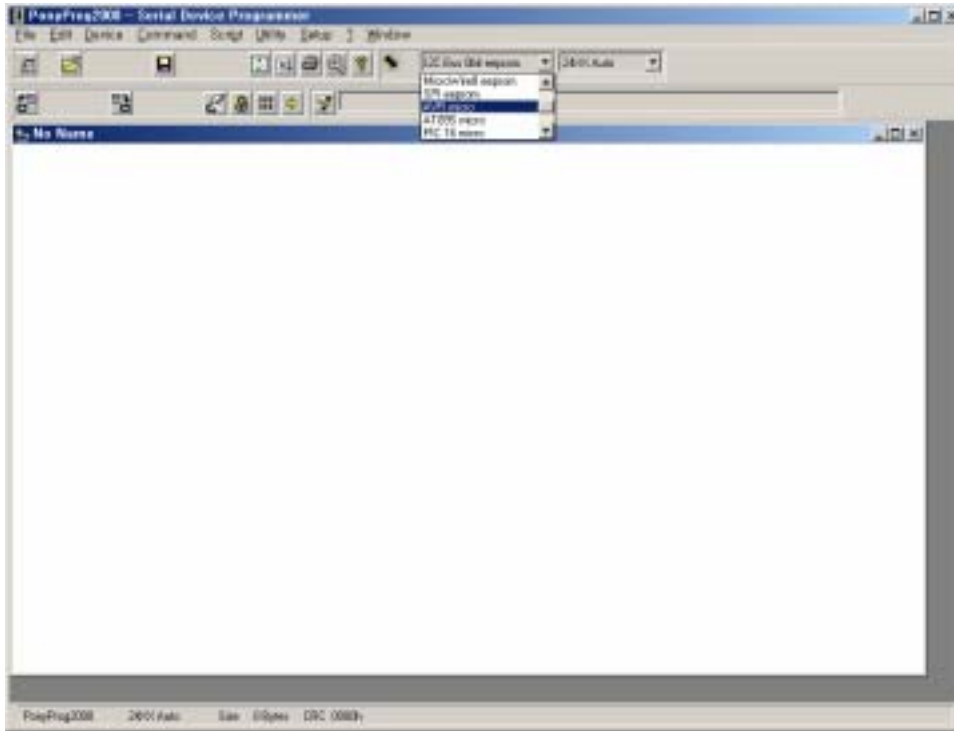
After executing 'PonyProg2000.exe', push the 'OK' button, which is located under the box.



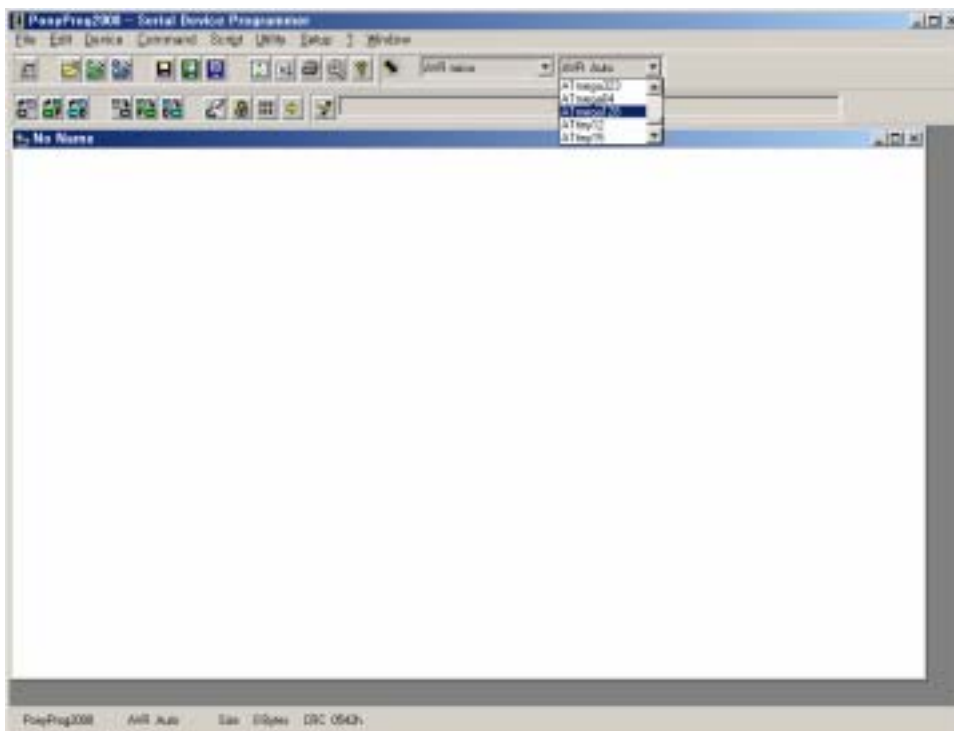
Under the message box, push the 'OK' button.



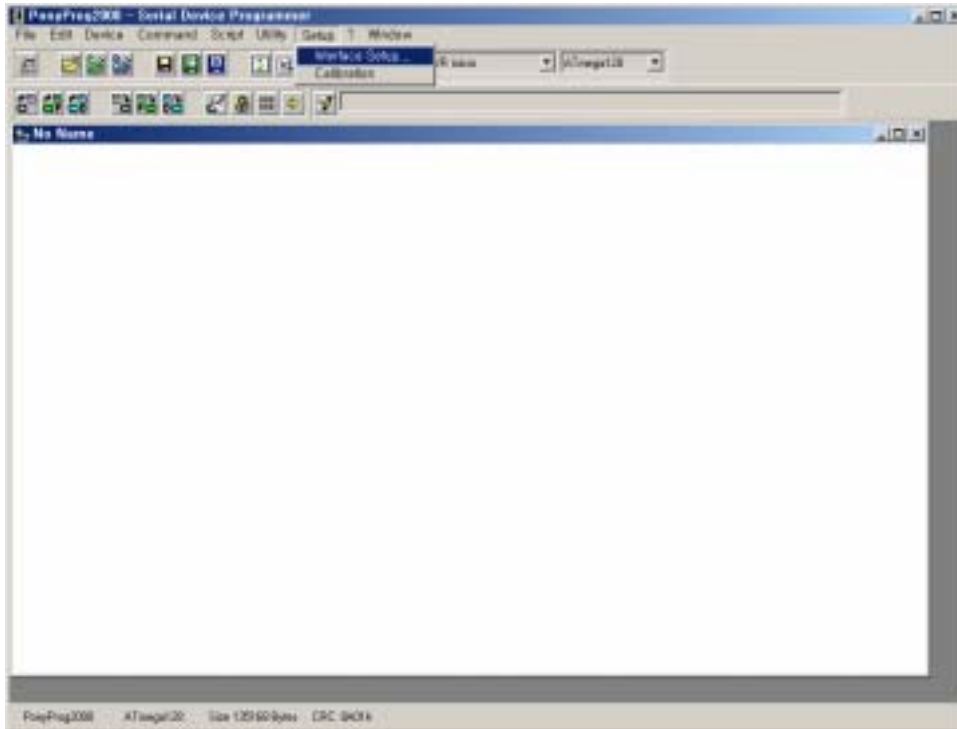
Select 'AVR micro' from the first 'combo box'.



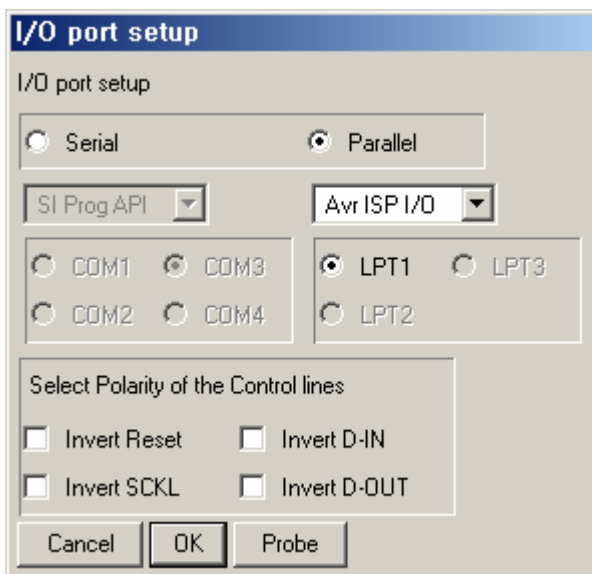
Select 'Atmega128' from the second 'combo box'.



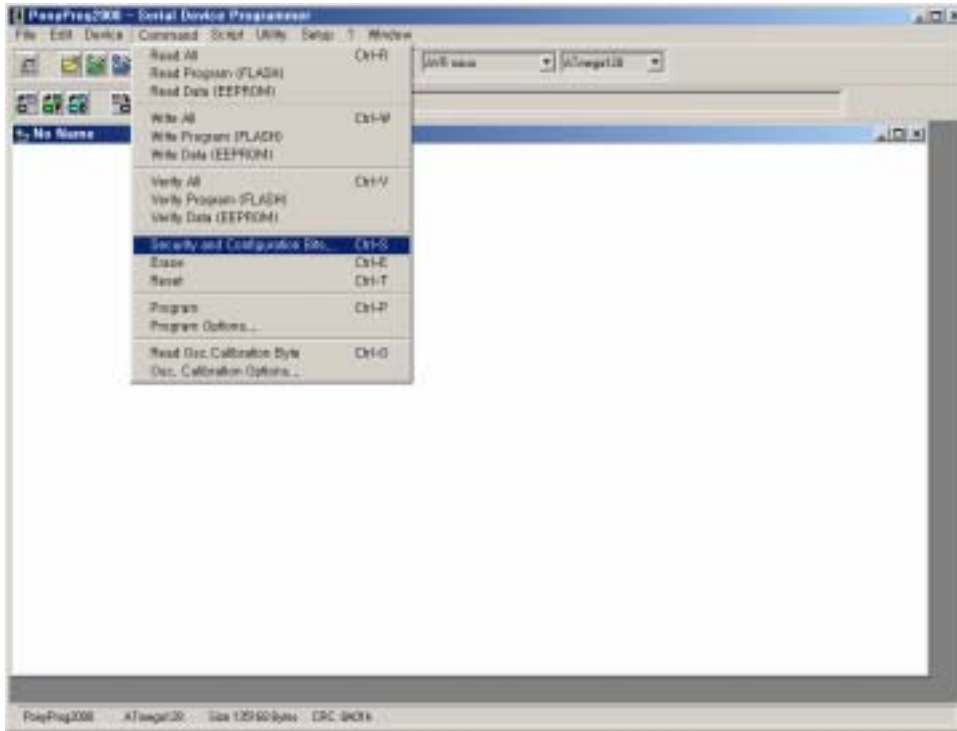
Select 'Interface Setup' from the 'setup menu'.



Designating the 'I/O'port like below box, and then push the 'OK' button.

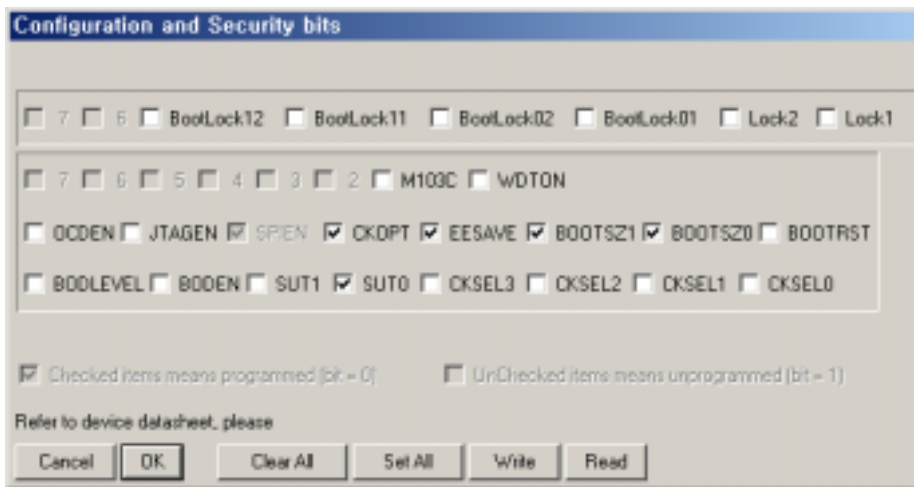


From the Command menu, select the 'Security and Configuration Bits'.

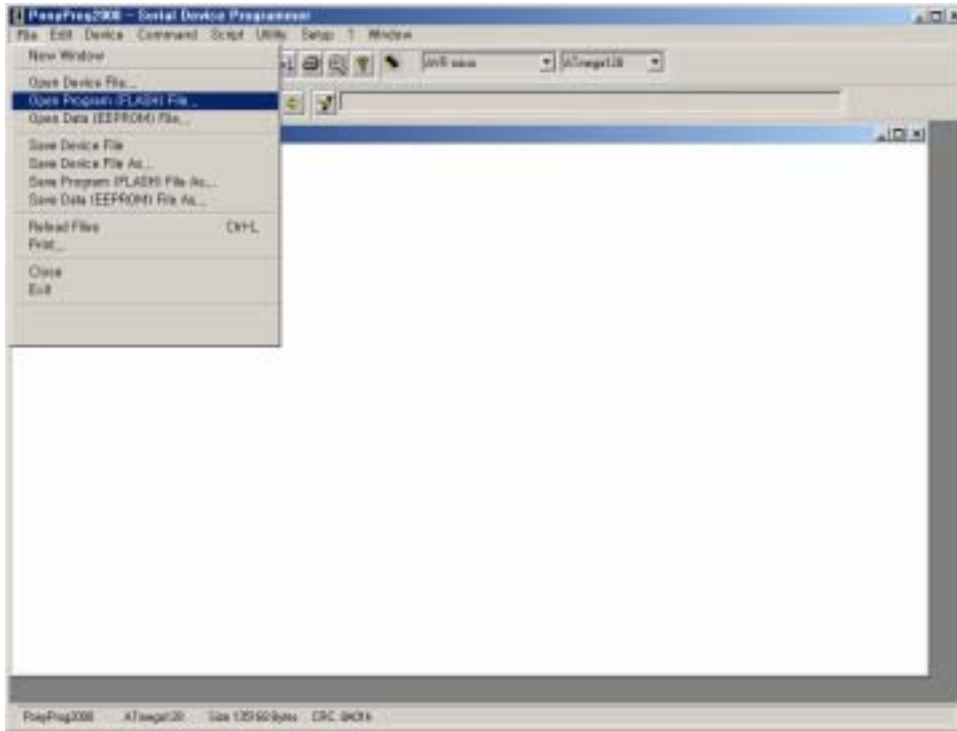


Push the 'Read' button from the below box and confirm that this setup is going to the same checked below box. If setup is dissimilarity, Push the 'Clear All' button for cancellation the check box and then push the 'White' button after select the check box like below.

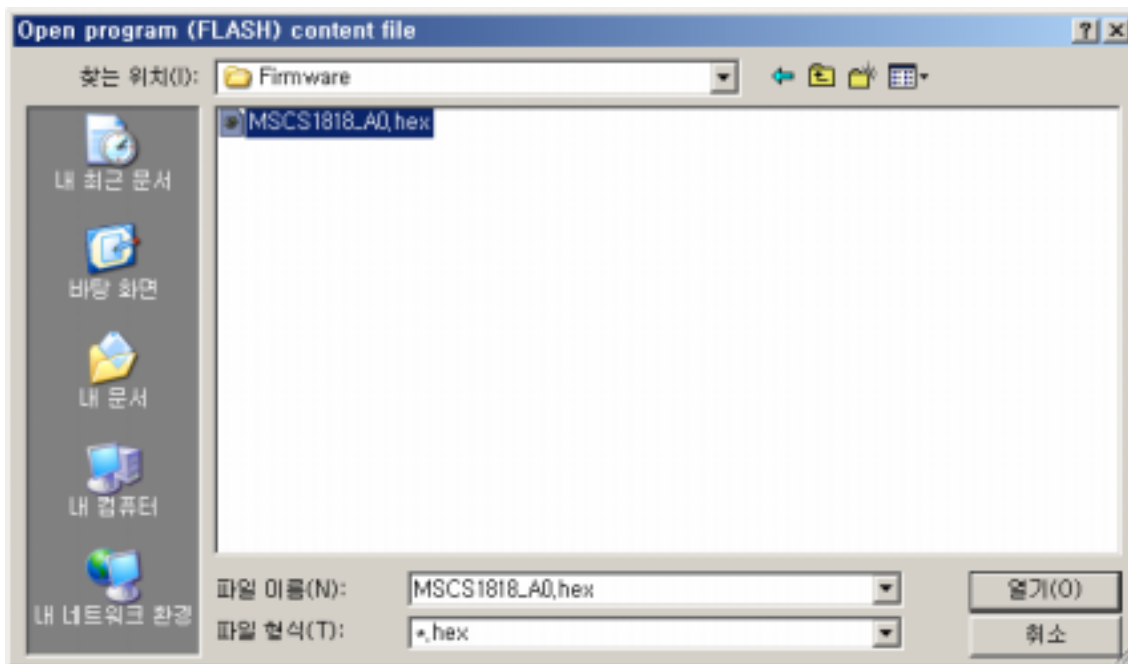
After push 'White' button, push the 'Read' button' from the below box and confirm the setup like below.



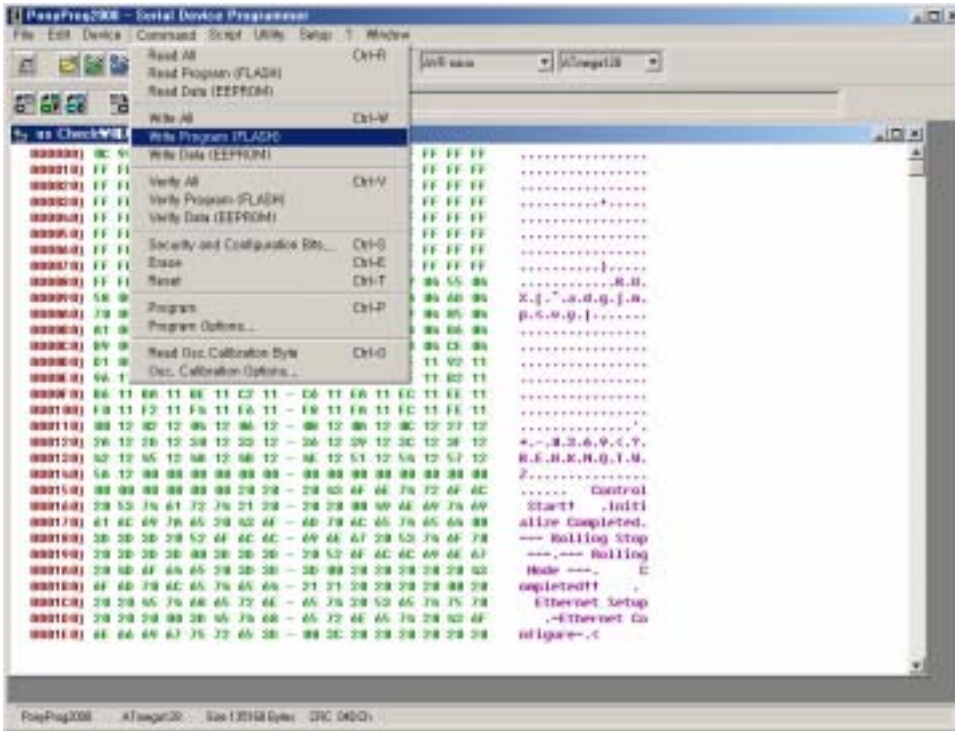
From the file menu, select the 'Open Program (FLASH)File'.



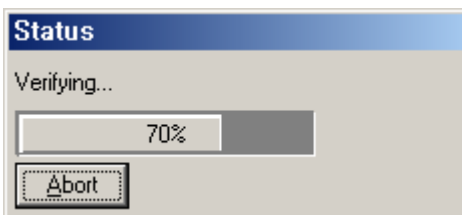
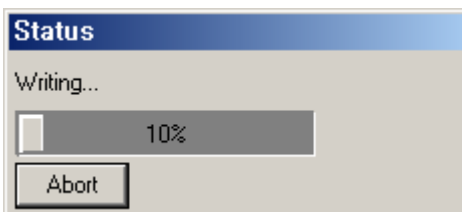
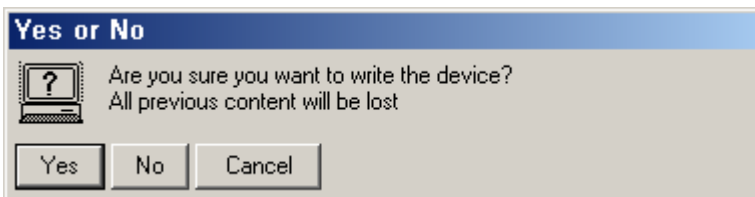
Insert 'CD' into the CD-Rom and select the 'hex' file from the Firmware's folder and then push the 'open' button.



Select 'Write Program (FLASH)' from the 'Command' menu.



If you press the 'OK' button from below box, Writing and Verifying will be operated as one by one.



Press the 'OK' button and complete the download.

