

Trend Display Channel Hiding and Showing

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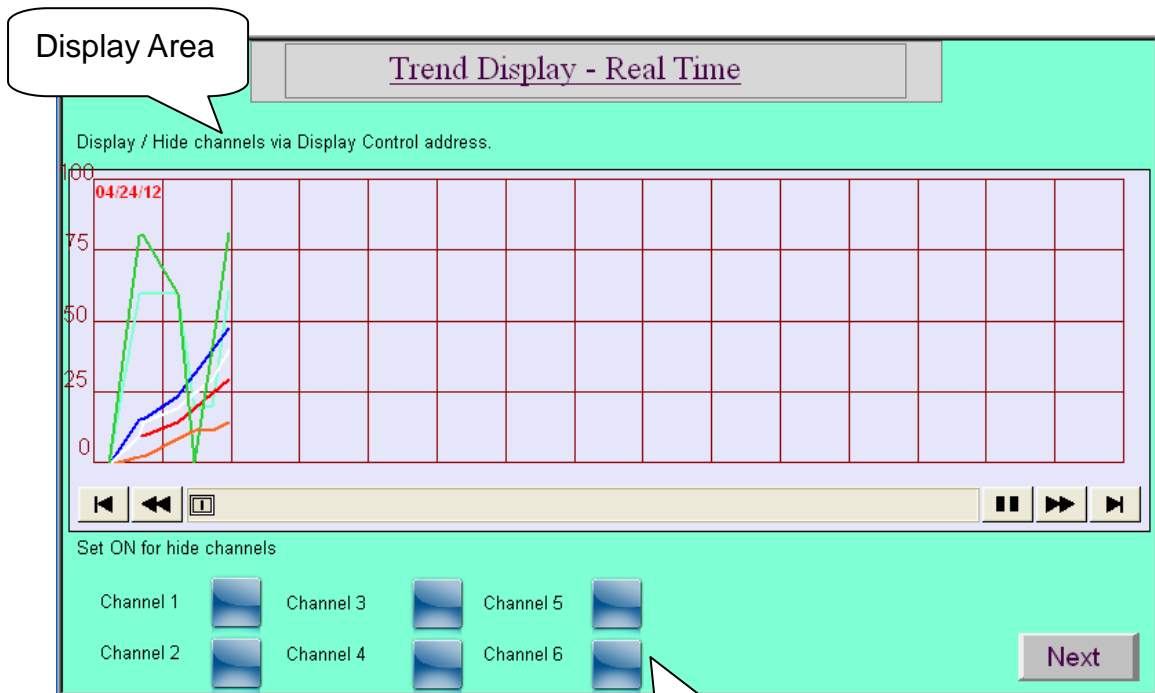
1. Overview and Operation

Overview

When displaying multiple trend lines at the same time, it may not be easy to observe and identify. This demo project shows how to show or hide channels in Trend Display settings.

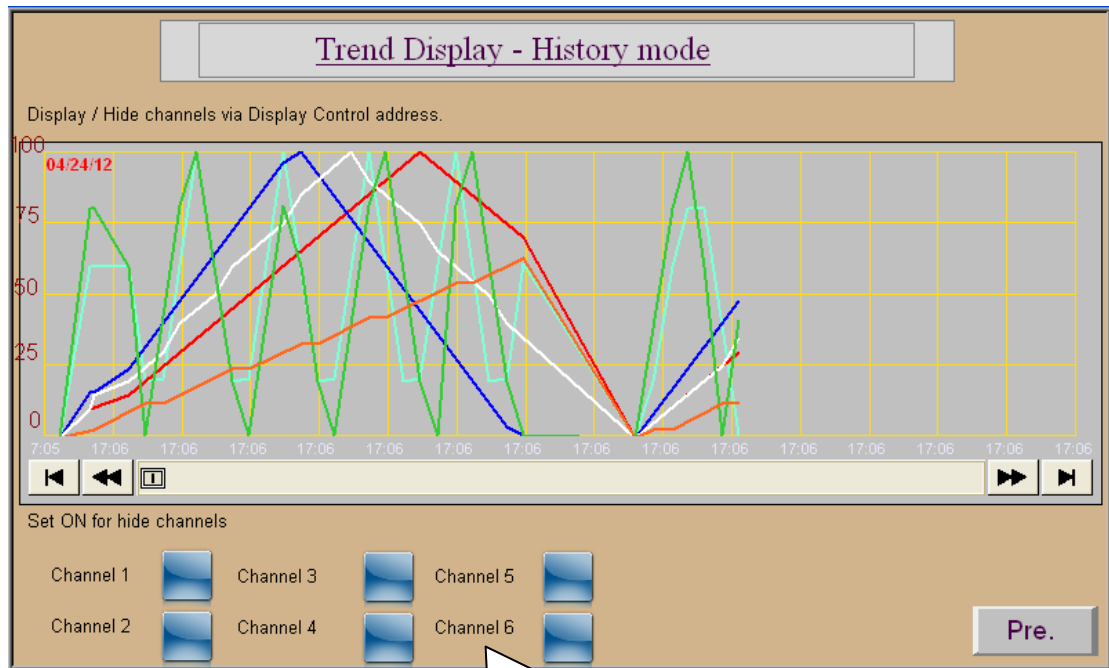
Operation

- Trend Display – Real Time



6 trigger buttons to hide channels.

- Trend Display – History Mode

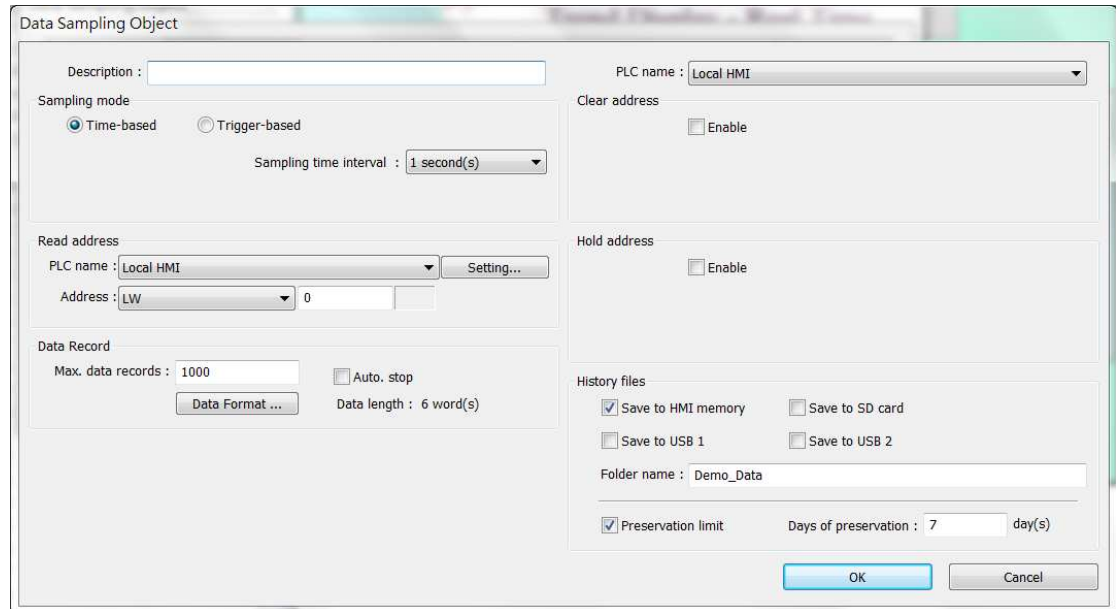


6 trigger buttons to hide channels.

2. Setting up the Screen

2-1. Go to Object / Data Sampling

Open data sampling setting window:



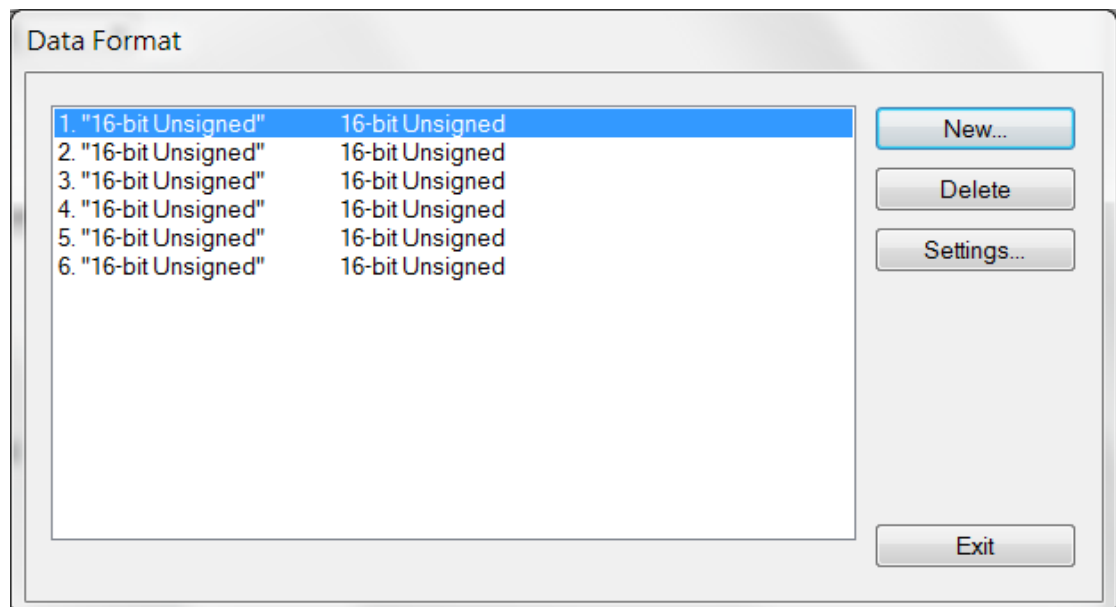
The 'Data Sampling Object' dialog box is shown with the following settings:

- Description: (empty text box)
- Sampling mode: ☒ Time-based, ☐ Trigger-based
- Sampling time interval: 1 second(s)
- PLC name: Local HMI
- Clear address: ☐ Enable
- Read address: PLC name: Local HMI, Address: LW 0
- Hold address: ☐ Enable
- Data Record: Max. data records: 1000, ☐ Auto. stop, Data length: 6 word(s)
- History files: ☒ Save to HMI memory, ☐ Save to SD card, ☐ Save to USB 1, ☐ Save to USB 2, Folder name: Demo_Data, ☒ Preservation limit, Days of preservation: 7 day(s)

Buttons: OK, Cancel

Step 1. In [Sampling mode] select [Time-based], and set [Sampling time interval] to "1 second(s)".

Step 2. Set [Read address] to LW-0, and in [Data Record] / [Data Format] set 6 data records as shown below:



The 'Data Format' dialog box shows a list of 6 data records, all set to "16-bit Unsigned".

Record	Format
1. "16-bit Unsigned"	16-bit Unsigned
2. "16-bit Unsigned"	16-bit Unsigned
3. "16-bit Unsigned"	16-bit Unsigned
4. "16-bit Unsigned"	16-bit Unsigned
5. "16-bit Unsigned"	16-bit Unsigned
6. "16-bit Unsigned"	16-bit Unsigned

Buttons: New..., Delete, Settings..., Exit

Step 3. In [History files] select [Save to HMI memory] and set [Days of preservation] to "7 day(s)".

2-2. Add a new Trend Display Object – Real Time on window 10.

Trend Display setting window as shown below:

- Trend Display General Properties:

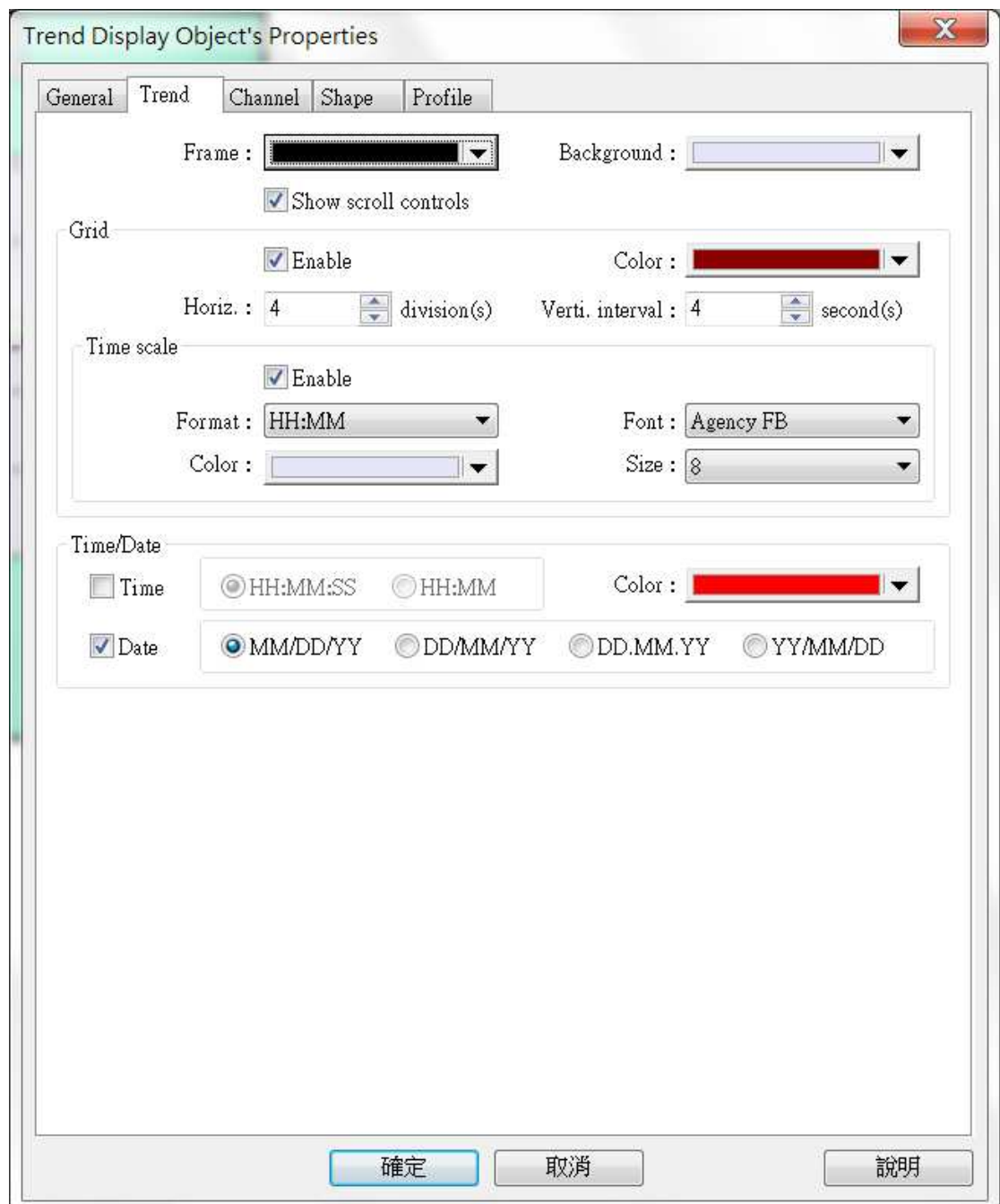
The screenshot shows the 'Trend Display Object's Properties' dialog box with the 'General' tab selected. The 'Description' field is empty. The 'Data Sampling Object index' is set to '0'. The 'Trend type' is set to 'Real-time'. A note states: 'Note : if no. of channels is changed, you must reset HMI's data samplings !!'. The 'X axis time range' is set to 'Time' (selected) and 'Distance' is set to '60 second(s)'. The 'Hold control' and 'Watch line' sections each have an 'Enable' checkbox that is currently unchecked. At the bottom, there are three buttons: '確定' (OK), '取消' (Cancel), and '說明' (Help).

- Step 1. Set [Trend type] to [Real-time].
Set [Data Sampling Object index] to "0".

The [no. of channels] will be 6 channels.

Step 2 [X axis time range] select [Time], set [Distance] to “60 second(s)”.

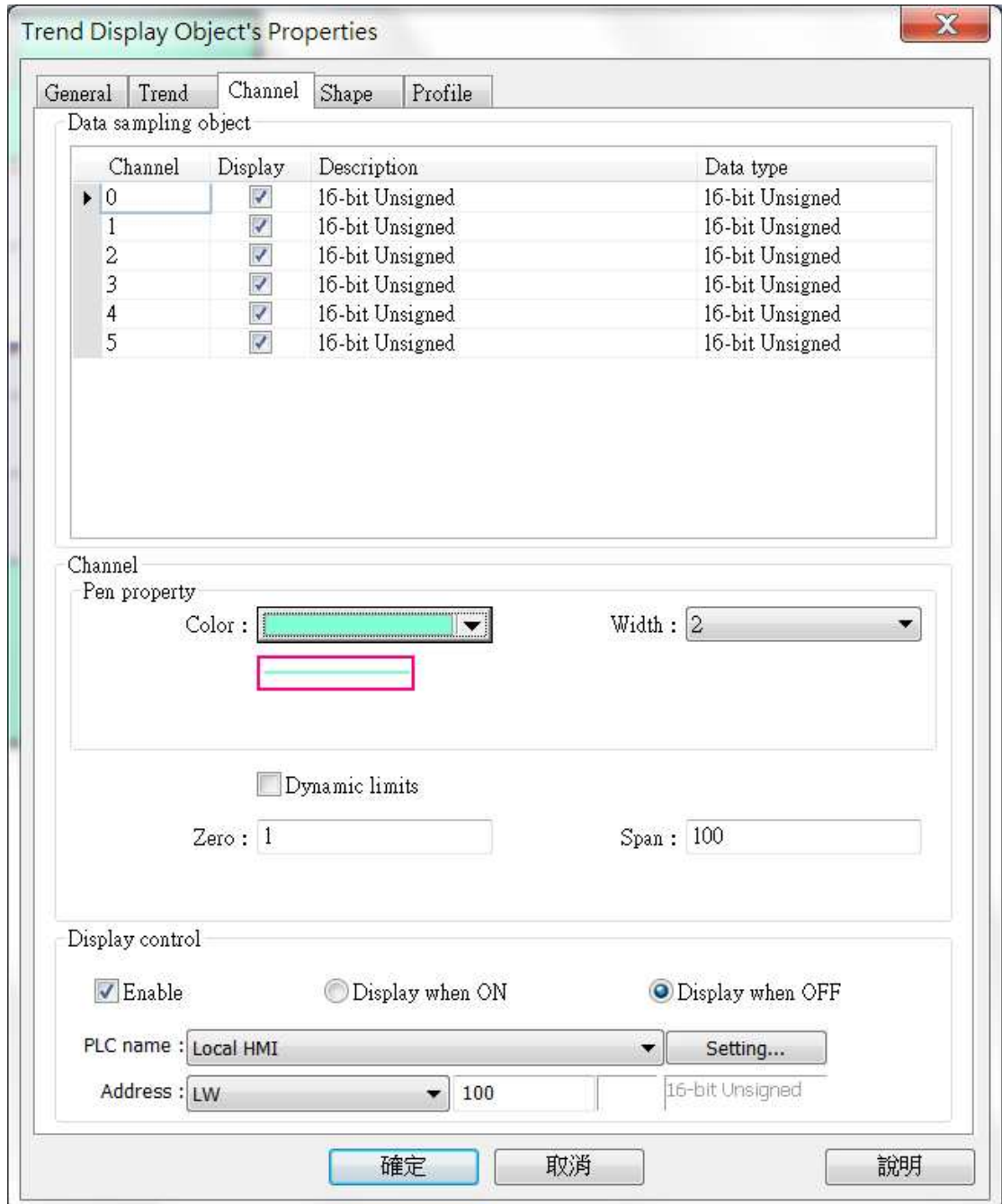
- Go to [Trend] tab:



Step 1. For [Grid] and [Time scale] check [Enable].

Step 2. Go to [Channel] tab to set the color, width and limits of the trend lines that represent the channels.

Step 3. Set the format of [Time] and [Date] to be shown on the Trend Display.



The screenshot shows the 'Trend Display Object's Properties' dialog box with the 'Channel' tab selected. The dialog has five tabs: General, Trend, Channel, Shape, and Profile. The 'Channel' tab contains the following sections:

- Data sampling object:** A table with 4 columns: Channel, Display, Description, and Data type. It lists 6 channels (0-5), all with '16-bit Unsigned' data type and 'Display' checked.
- Channel Pen property:** Includes a 'Color' dropdown (set to red), a 'Width' dropdown (set to 2), and a preview box showing a red line.
- Dynamic limits:** A checkbox labeled 'Dynamic limits' is unchecked.
- Zero:** A text box containing the value '1'.
- Span:** A text box containing the value '100'.
- Display control:** Includes three radio buttons: 'Enable' (checked), 'Display when ON' (unchecked), and 'Display when OFF' (unchecked). Below are fields for 'PLC name' (Local HMI), 'Address' (LW 100), and 'Data type' (16-bit Unsigned).

At the bottom are three buttons: '確定' (OK), '取消' (Cancel), and '説明' (Help).

Channel	Display	Description	Data type
0	<input checked="" type="checkbox"/>	16-bit Unsigned	16-bit Unsigned
1	<input checked="" type="checkbox"/>	16-bit Unsigned	16-bit Unsigned
2	<input checked="" type="checkbox"/>	16-bit Unsigned	16-bit Unsigned
3	<input checked="" type="checkbox"/>	16-bit Unsigned	16-bit Unsigned
4	<input checked="" type="checkbox"/>	16-bit Unsigned	16-bit Unsigned
5	<input checked="" type="checkbox"/>	16-bit Unsigned	16-bit Unsigned

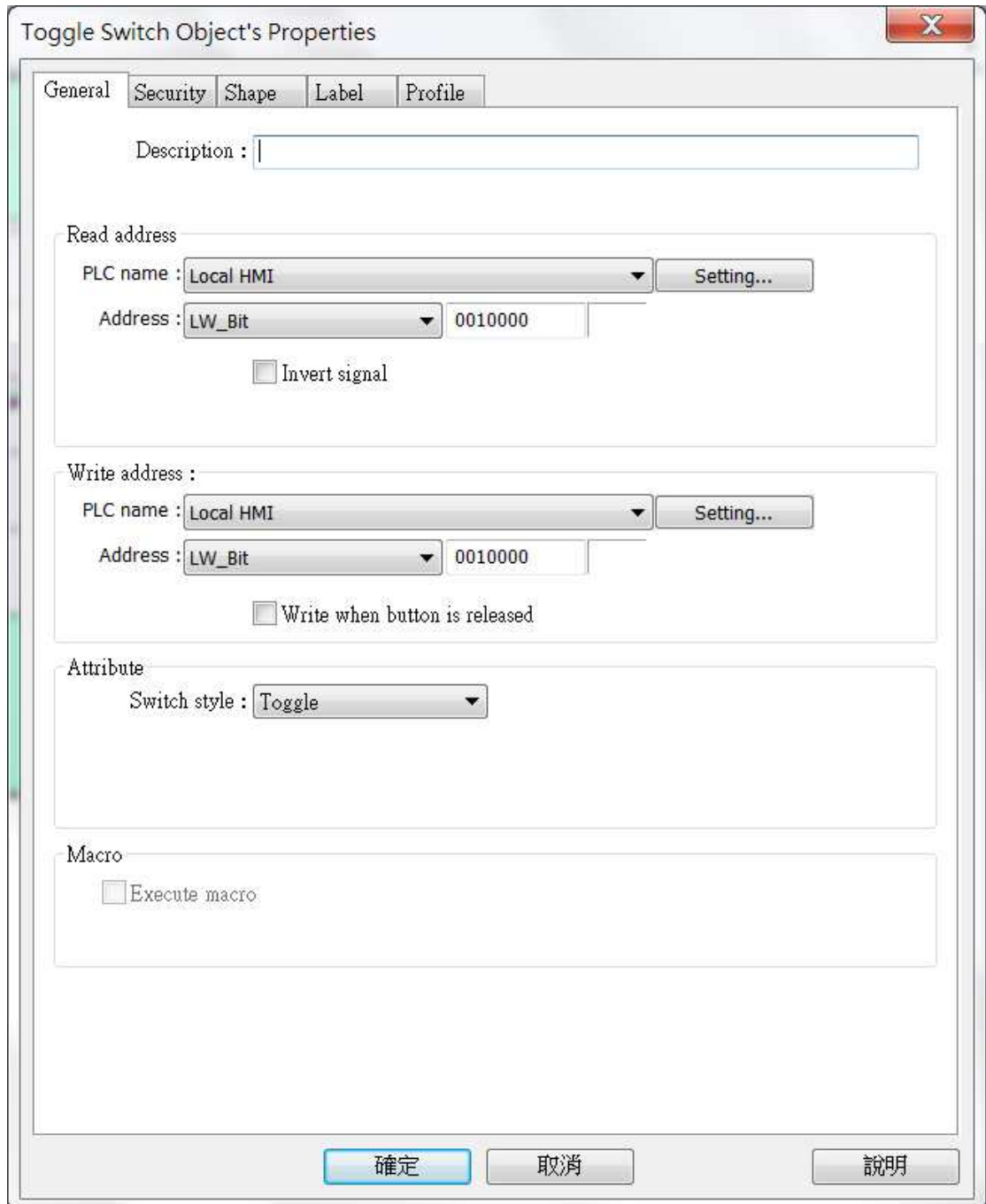
Step 1. Check the 6 channels.

Step 2. Set the color and width of the trend line of each channel.

Step 3. Enable “Display control”, set control address to LW-100. When LW-100 address bit is OFF, the channel will be displayed.

The example above shows there are six channels, control address LW-100, the channels will be: LW_Bit 10000~LW_Bit 10005.

Create 6 Toggle Switch Objects, set to LW_Bit 10000~10005.



Toggle Switch Object's Properties

General Security Shape Label Profile

Description : |

Read address

PLC name : Local HMI Setting...

Address : LW_Bit 0010000

☐ Invert signal

Write address :

PLC name : Local HMI Setting...

Address : LW_Bit 0010000

☐ Write when button is released

Attribute

Switch style : Toggle

Macro

☐ Execute macro

確定 取消 說明

2-3. Add a new Trend Display Object – History mode on window 11.

- Trend Display General Properties:

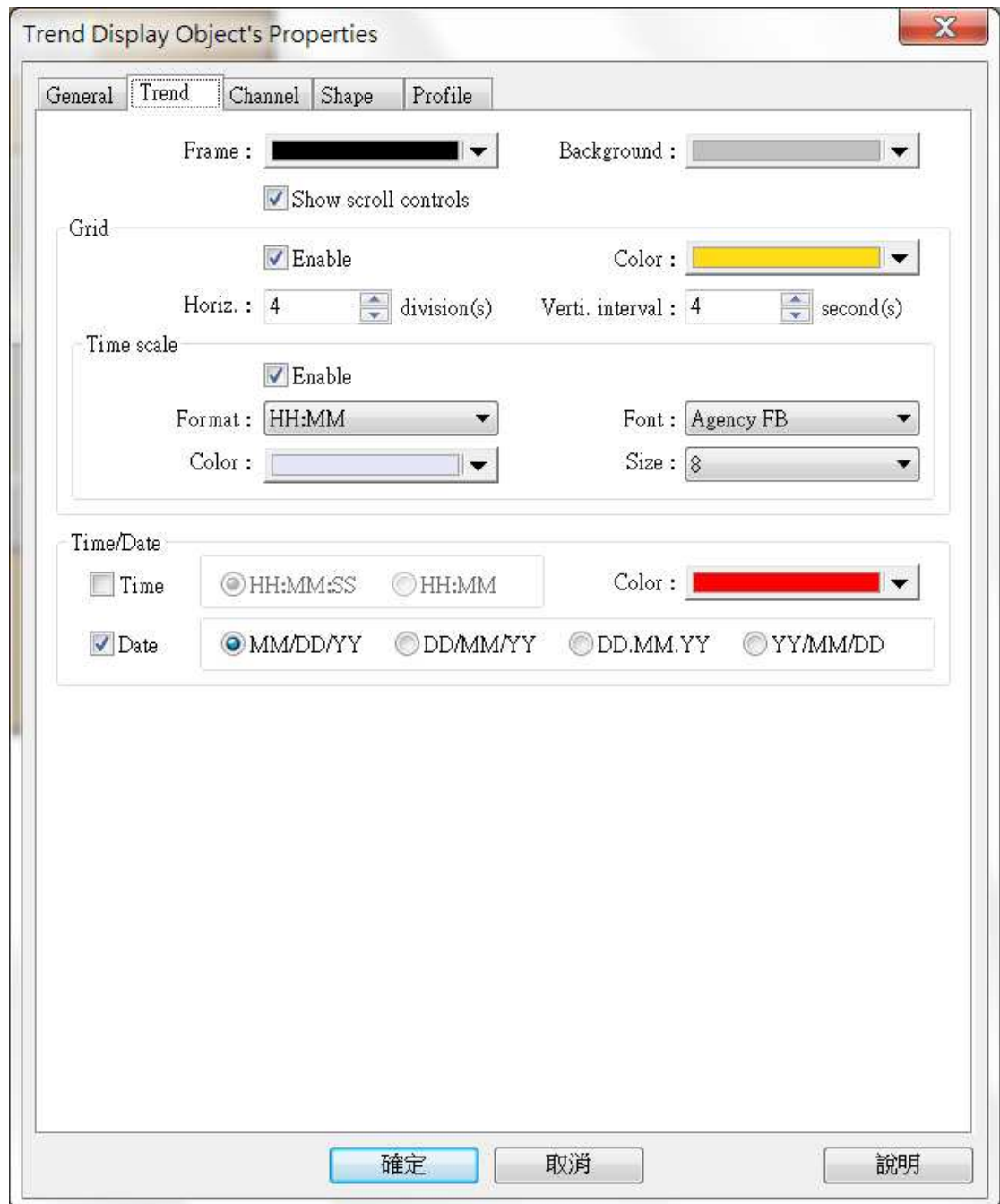
The screenshot shows the 'Trend Display Object's Properties' dialog box with the 'General' tab selected. The dialog has a title bar with a close button (X). Inside, there are five tabs: 'General', 'Trend', 'Channel', 'Shape', and 'Profile'. The 'General' tab contains the following fields and controls:

- Description :** A text input field.
- Data Sampling Object index :** A dropdown menu showing '0'.
- Trend type :** A dropdown menu showing 'History'.
- Note :** A text label stating 'if no. of channels is changed, you must reset HMI's data samplings !!'.
- X axis time range :** Two radio buttons, 'Pixel' and 'Time'. 'Time' is selected.
- Distance :** A text input field showing '60' followed by the unit 'second(s)'.
- History control** section:
 - PLC name :** A dropdown menu showing 'Local HMI' and a 'Setting...' button.
 - Address :** A dropdown menu showing 'LW', a text input field showing '12', and a label '16-bit Unsigned'.
- Watch line** section:
 - ☒ **Enable**
 - PLC name :** A dropdown menu showing 'Local HMI' and a 'Setting...' button.
 - Address :** A dropdown menu showing 'LW', a text input field showing '13', and a label '16-bit Unsigned'.

At the bottom of the dialog are three buttons: '確定' (OK), '取消' (Cancel), and '說明' (Help).

Step 1. Set [Trend type] to [History].

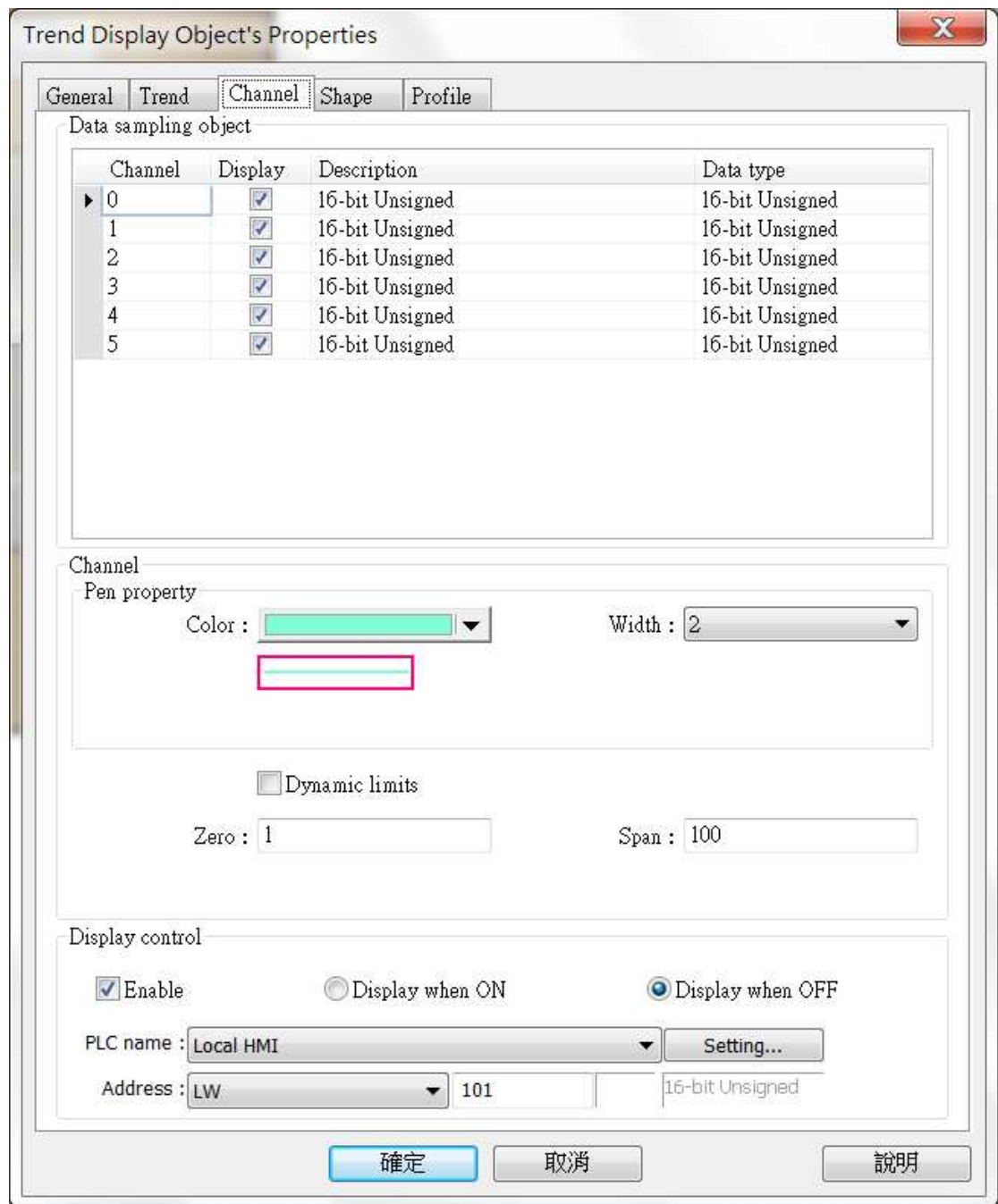
- Go to [Trend] tab:



Step 1. For [Grid] and [Time scale] check [Enable].

Step 2. Go to [Channel] tab to set the color, width and limits of the trend lines that represent the channels.

Step 3. Set the format of [Time] and [Date] to be shown on the Trend Display.



Step 1. Check the 6 channels.

Step 2. Set the color and width of the trend line of each channel.

Step 3. Enable "Display control", set control address to LW-101. When LW-101 address bit is OFF, the channel will be displayed.

The example above shows there are six channels, control address LW-101, the channels will be: LW_Bit 10100~LW_Bit 10105.

Create 6 Toggle Switch Objects, set to LW_Bit 10100~10105.

Toggle Switch Object's Properties

General Security Shape Label Profile

Description :

Read address

PLC name : Local HMI

Address : LW_Bit

☐ Invert signal

Write address :

PLC name : Local HMI

Address : LW_Bit

☐ Write when button is released

Attribute

Switch style :

Macro

☐ Execute macro

3. Addresses

The object addresses used in this demo project are listed below, the addresses and object ID can be modified based on actual usage.

Address		Object ID	Description
Window 4			
Word	LW0 ~ LW5		Read address of data sampling.
Window 10			
Word	LW0~LW5	SW_0~SW_5	Data Sampling.
	LW6~LW11	NE_0~NE_5	Watch the address of the six channels.
Bit	LW_Bit 10000~10005	TS_0~TS_5	Show or hide the channels.
Window 11			
Word	LW6~LW11	NE_0~NE_5	Watch the address of the six channels.
Bit	LW_Bit 10100~10105	TS_0~TS_5	Show or hide the channels.