

Log Analysis Tool User Guide (ENG)



2024/03/18

V1.0.11.0

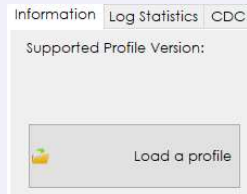


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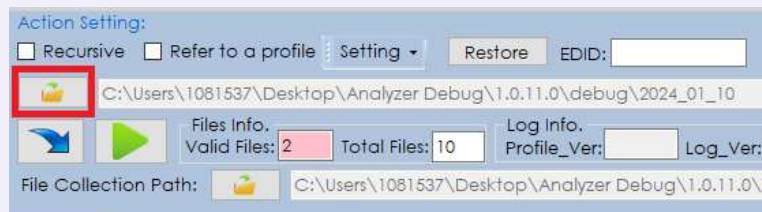
Analyze the Logs

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❖ Step1> Load a profile

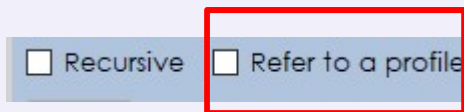


❖ Step2> Load the logs

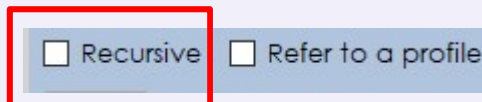


❖ Step3> Refer to a profile

➤ The threshold is set with reference to the profile loaded in step 1.



❖ Step4> Load all files in the specified folder and all files within its subfolders. (Option)



Analyze the Logs (Cont.)

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❖ Step5> Set the filter condition (Option)

Setting ▾ Restore EDID:

EDID: SensorID: FWID: PID:

- Check the profile name
- Filter out the NG log ▶
- Generate data ▶
- Detection of outlier ▶
- ☒ Get the margin samples ▶

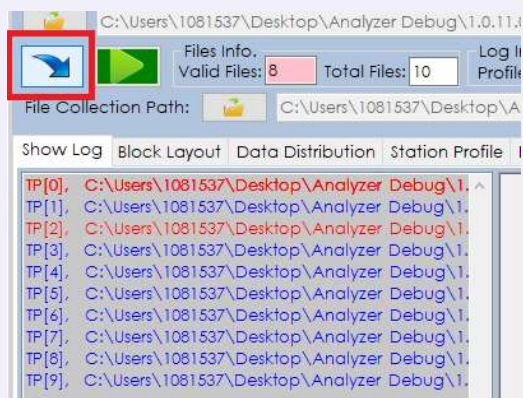
Short Data
Open Data

Condition	Description
Check the profile name	Parses the log's ProFile_Path and checks if the strings match. If matches, the log will be included in the analysis group
Filter out the NG log	Parses the result of [Short Test] and [Open Test], if it is pass, the log will be included in the analysis group.
EDID/SensorID/FWID/PID	Parses the log's EDID/SensorID/FWID/PID, if the strings match, the log will be included in the analysis group
Detection of outlier	To filter the abnormal Files using outlier detection.

Analyze the Logs (Cont.)

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❖ Step6> Import the logs



❖ Step7> Start to analyze the logs

➤ You will get the total files number



❖ Step8> Start to observe and analyze the results



Analyze the Logs (Cont.)

❖ Step9> Choose the average type

- This selection determines how [Uniformity_Golden] of the profile are presented.

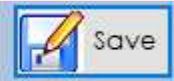
Average Type
☒ ByNode ☐ ByBlock ☐ ByProfile

Type	Description	[Uniformity_Golden]
ByNode	Calculation of the average value is based on one node. Every node's value of [Uniformity_Golden] is difference	<pre> [Uniformity_Golden] 0,6,-1,1;0,4,-1,1;0,3,-1,1;0,4,-1,1;0,9,-1, 0,2,-1,1;0,2,-1,1;0,1,-1,1;0,1,-1,1;0,3,-1, 0,3,-1,1;0,2,-1,1;0,2,-1,1;0,2,-1,1;0,8,-1, 0,5,-1,1;0,3,-1,1;0,3,-1,1;0,6,-1,1;0,2826, 0,4,-1,1;0,3,-1,1;0,3,-1,1;0,5,-1,1;0,2470, 0,5,-1,1;0,3,-1,1;0,3,-1,1;0,5,-1,1;0,2418, 0,4,-1,1;0,2,-1,1;0,2,-1,1;0,5,-1,1;0,2392, 0,4,-1,1;0,3,-1,1;0,3,-1,1;0,5,-1,1;0,2376, 0,4,-1,1;0,3,-1,1;0,3,-1,1;0,5,-1,1;0,2366, 0,3,-1,1;0,2,-1,1;0,3,-1,1;0,5,-1,1;0,2354, </pre>
ByBlock	Calculation of the average value is based on one block.	<pre> [Uniformity_Golden] 0,6,-1,1;0,4,-1,1;0,4,-1,1;0,4,-1,1;0,4, 0,4,-1,1;0,1101,-1,1;0,1101,-1,1;0,1101, 0,4,-1,1;0,1101,-1,1;0,1101,-1,1;0,1101, 0,4,-1,1;0,1101,-1,1;0,1101,-1,1;0,1101, 0,4,-1,1;0,1101,-1,1;0,1101,-1,1;0,1101, 0,4,-1,1;0,1101,-1,1;0,1101,-1,1;0,1101, 0,4,-1,1;0,1101,-1,1;0,1101,-1,1;0,1101, </pre>
ByProfile	The average value takes the golden in the profile and sets it. Every node's value of [Uniformity_Golden] is as same as the profile loaded.	

Analyze the Logs (Cont.)

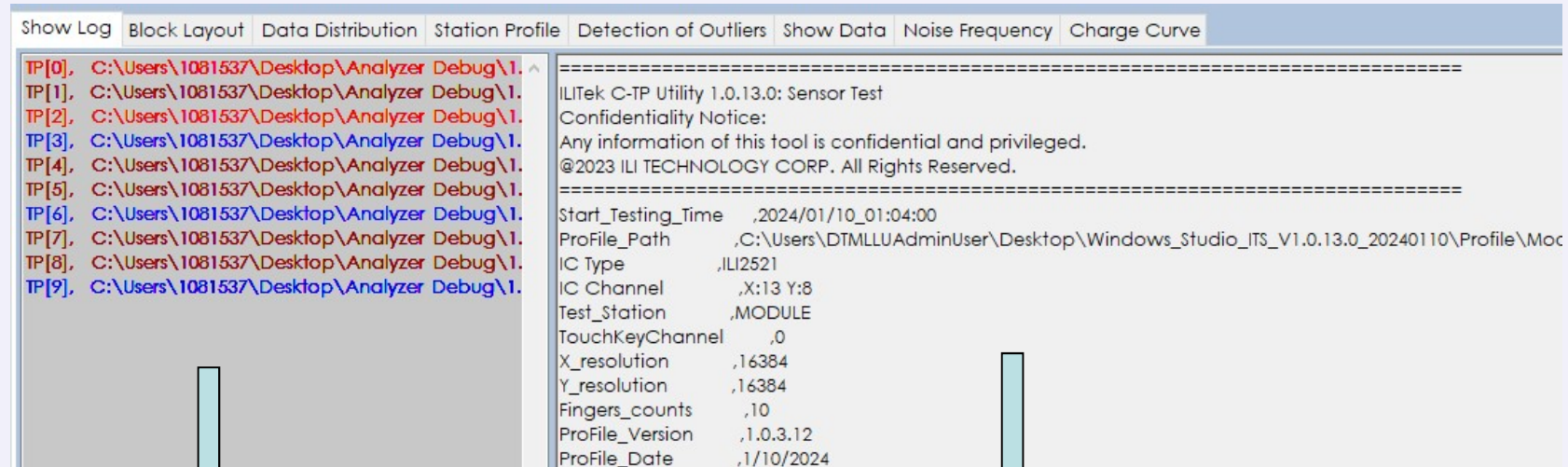
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❖ Step10> Generate a new profile

Log Info.
Profile_Ver: Log_Ver: IC Type: ILI2901 X Channel: 76 Y Channel: 48  Save

“Show Log” Page - Functional Description

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To List all file names

Red: The log's format is not correct.

Dark Red: Files that do not meet the filtering criteria

Blue: Successful inclusion of analyzed files

Double-click on the file to display the file's content

“Block Layout” Page - Functional Description

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❖ Purpose

- To edit the spec of each test item
- Uses block area information to describe the area to which each point belongs.
- Each area is described in terms of location and threshold.

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	20%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%

Item	Description
Block Index	Default is 9 blocks and edge size is 1, use color to identify which area a point belongs to.
threshold	Uniformity raw data is % to identify Others is constant to identify
Bias Threshold	Bias form the average Uniformity raw data is % to identify Others is constant to identify

Threshold

Bias Threshold

Block Index



“Block Layout” Page - Functional Description (Cont.)

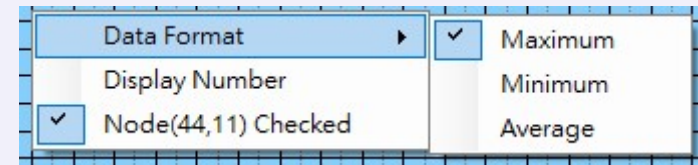


➤ Supported test item

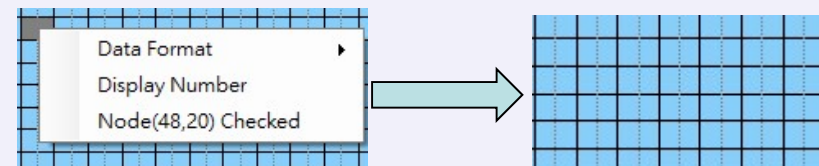
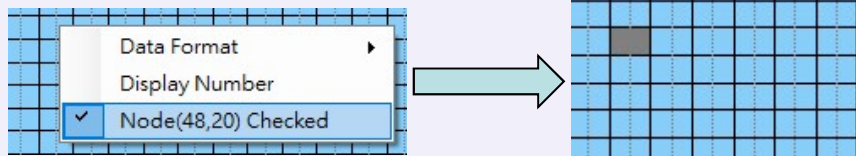
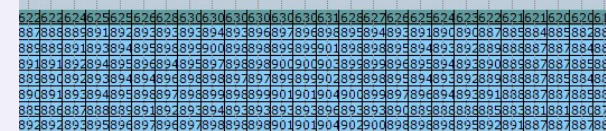
- Uniformity
 - Raw Data / TxDiff / RxDiff
- MicroOpen
 - Win1 / Win2 /RX_Delta

➤ Right-Click on the frame

- Data Format
 - Maximum / Minimum / Average
- Display Number:
 - shows the value on the frame
- Checked:
 - Click one node and Inclusion of judgmental or non-judgmental sensor testing



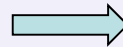
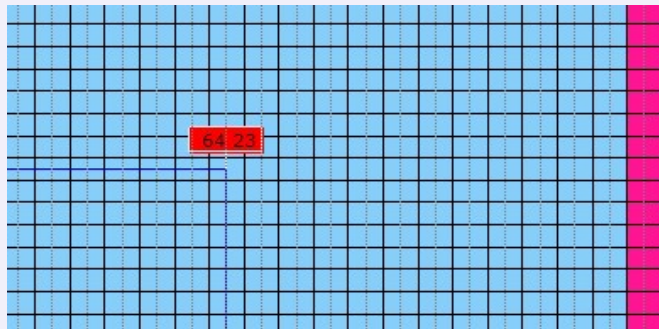
Threshold and Block Display(Zoom in/out: Ctrl + Drag and Drop Mouse)



“Block Layout” Page - Functional Description (Cont.)

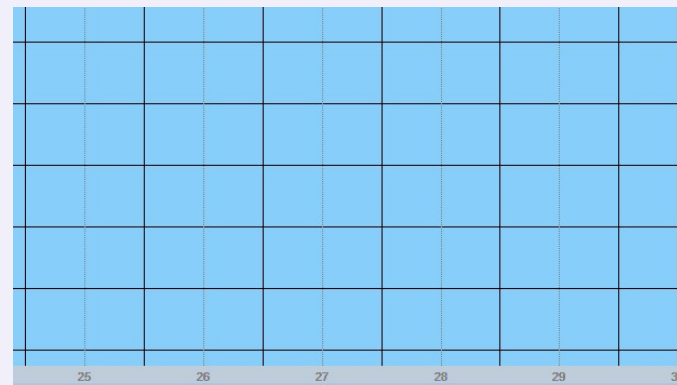
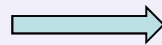
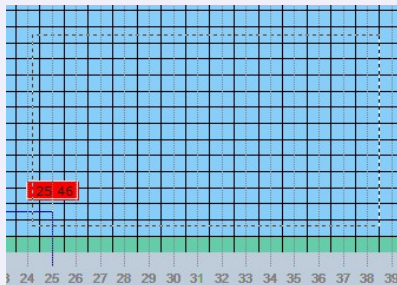


- ❖ When you click on any node, you will see a red label appear and display information about that point.



Threshold			
Avg:	1042		
Max:	1198	Min:	886
Bias Max:	1137		
Bias Min:	946		
Block Info.			
Index:	4		
Start:	(2,2)	End:	(75,47)
POS: X:64, Y:23			

- ❖ You can drag and drop mouse + ctrl key to zoom in or out frame.



“Block Layout” Page - Functional Description (Cont.)



❖ If you want to modify one node, you can add a block to describe it.

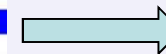
- Step1> Click one node
- Step2> Press the “Add”

- Step3> Set the start and end location and max/min threshold

- Step4> Press “Yes”

- Step5> You will see a block 9.

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	20%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%



Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	20%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%
A9	21%	20%	0.1%	0.1%



“Block Layout” Page - Functional Description (Cont.)



❖ If you want to modify one of the blocks.

➤ Step1> Click the block you want to modify it.(the block will be highlight)

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	20%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%

➤ Step2> Press “Modify”, you will see the setting window.

SX: 2

EX: 75

MAX: 21%

▲▼

SY: 1

EY: 1

MIN: 20%

▲▼

SET

CANCEL

➤ Step3> Press “SET”

➤ Step4> You will see the value of block 1 change

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	20%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%

➡

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	21%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%

“Block Layout” Page - Functional Description (Cont.)



- ❖ If you want to remove one of the blocks.
 - Step1> Click the block you want to modify it.(the block will be highlight)
 - Step2> If the block is default, You will see below information.



If the block is not default, you will remove if successful

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	21%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%
A9	21%	20%	0.1%	0.1%

➔

Idx	Max	Min	Bias Max	Bias Min
A0	20%	20%	0.14%	0.28%
A1	21%	20%	0.64%	0.64%
A2	20%	20%	0.14%	0.14%
A3	20%	20%	0.47%	0.58%
A4	15%	15%	9.16%	9.26%
A5	20%	20%	0.35%	0.47%
A6	20%	20%	0.28%	0.28%
A7	20%	20%	0.38%	0.38%
A8	20%	20%	0%	0.14%

- ❖ If you want to restore to default setting, you can click “Default”



“Block Layout” Page - Functional Description (Cont.)



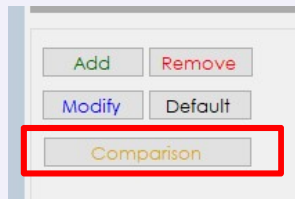
❖ Get the average bias between the log and the profile.

➤ Item :

- *Uniformity Raw Data / Tx Diff / Rxdiff*

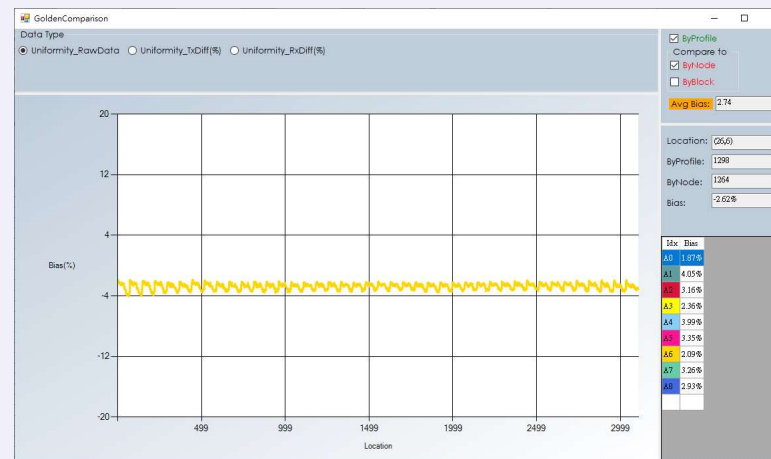
➤ Action:

- *Refers to a profile ->Block Layout Page -> Comparison*



➤ Formula:

- $(\text{Log_Node_Avg}(x, y) - \text{Golden_Node}(x, y)) / \text{Golden_Node}(x, y)$



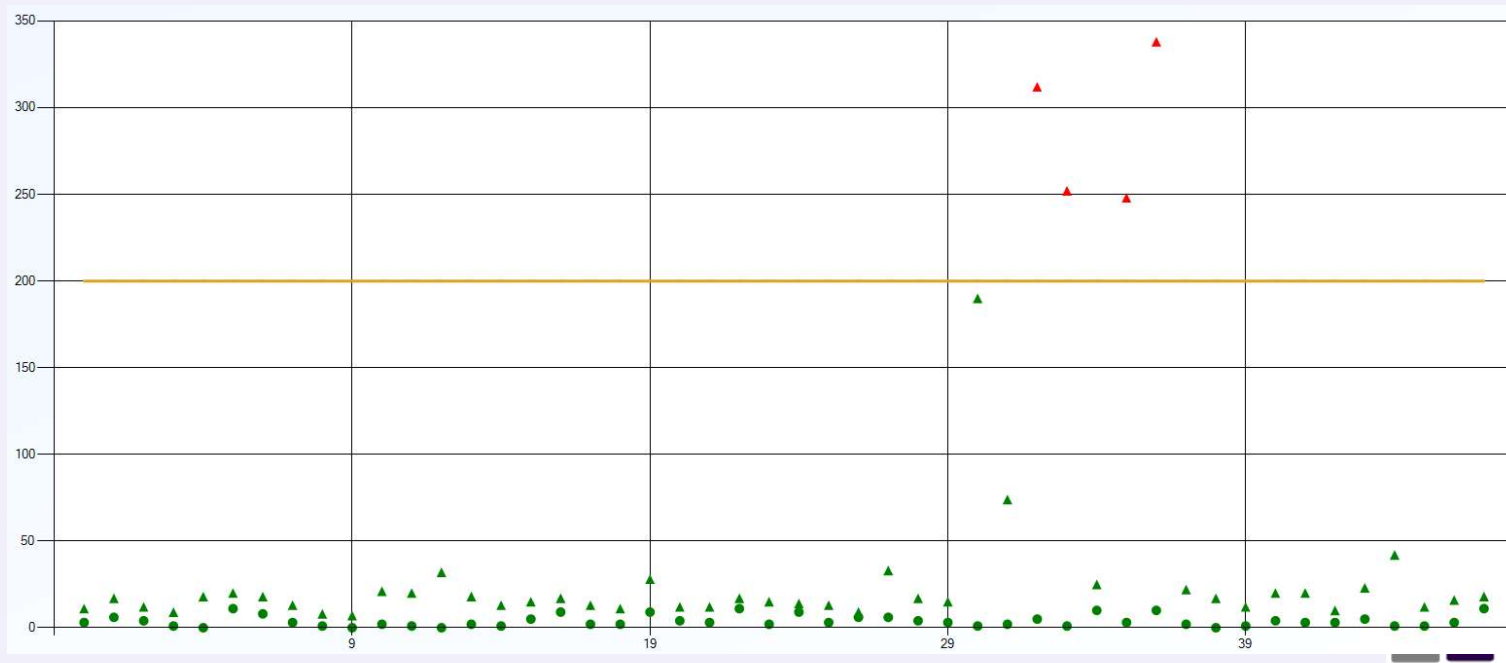
❖ Purpose

- Show the data distribution
- Show thresholds(Avg / Max / Min /BiasMax / BiasMin)
- Set the new threshold or new tolerance.
- Display the contents of a test item in a log.
- Collect the specified files.
- Judge the tolerance in Tx / Rx Diff

“Data Distribution” Page - Functional Description (Cont.)

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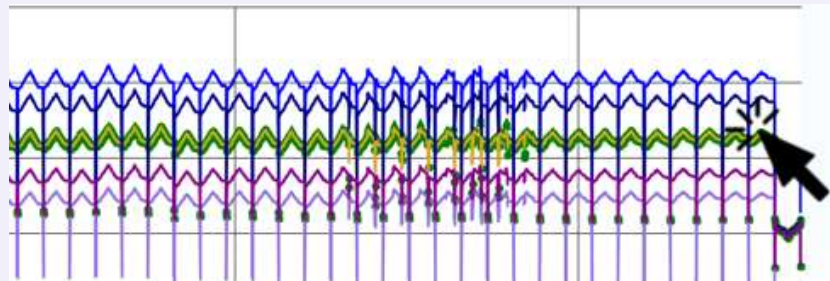
- Show the data distribution
 - The screen only displays the maximum and minimum values at that node.
 - X axis: Coordinate position of the node.
 - Y axis: the value of the node
 - ▲: the maximum of the node
 - ● : the minimum of the node
 - Red pattern: the node is failure
 - Green pattern: the node is pass



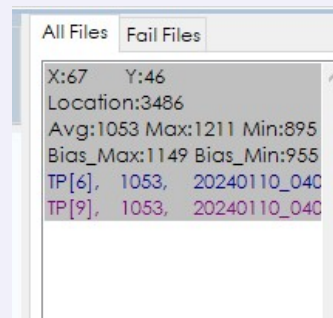
“Data Distribution” Page - Functional Description (Cont.)

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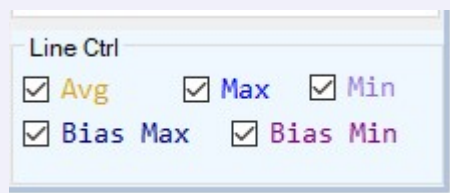
- ❖ Show thresholds(Avg / Max / Min /BiasMax / BiasMin)
 - Step1> Click one node



- Step2> Show the information of the node



- Step3> Determine whether the line is displayed on the graph.



“Data Distribution” Page - Functional Description (Cont.)



❖ Set the new threshold

➤ Short

- It will modify [Short_Test]- Max_Threshold in the profile

➤ Open

- It will modify [Open_Test]- Min_Threshold in the profile

All Nodes Setting:

Threshold:

Set

❖ Set the new tolerance.

➤ Tx Diff

- It will modify [Uniformity_Test]-
Uniformity_TxDiff_Node_Tolerance in the profile

➤ Rx Diff

- It will modify [Uniformity_Test]-
Uniformity_RxDiff_Node_Tolerance in the profile

All Nodes Setting:

Tolerance:

Set

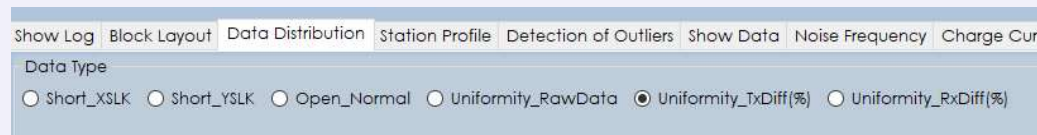


“Data Distribution” Page - Functional Description (Cont.)

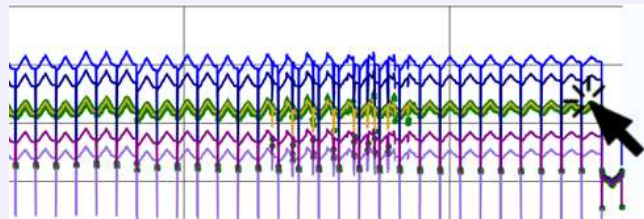


❖ Display the contents of a test item in a log.

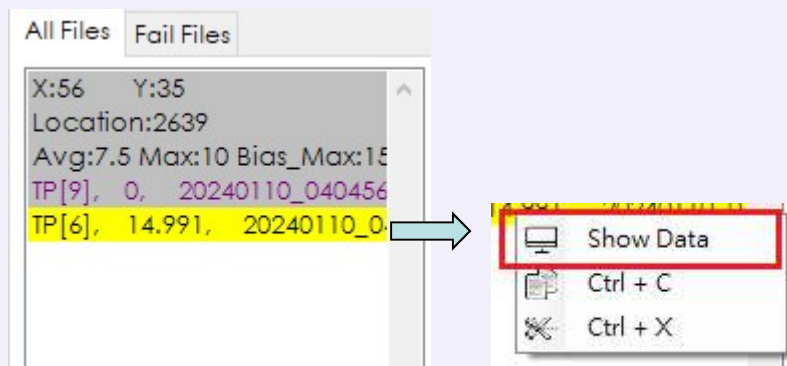
➤ Step1> Choose the data type



➤ Step2> Click any node you want to get it's information



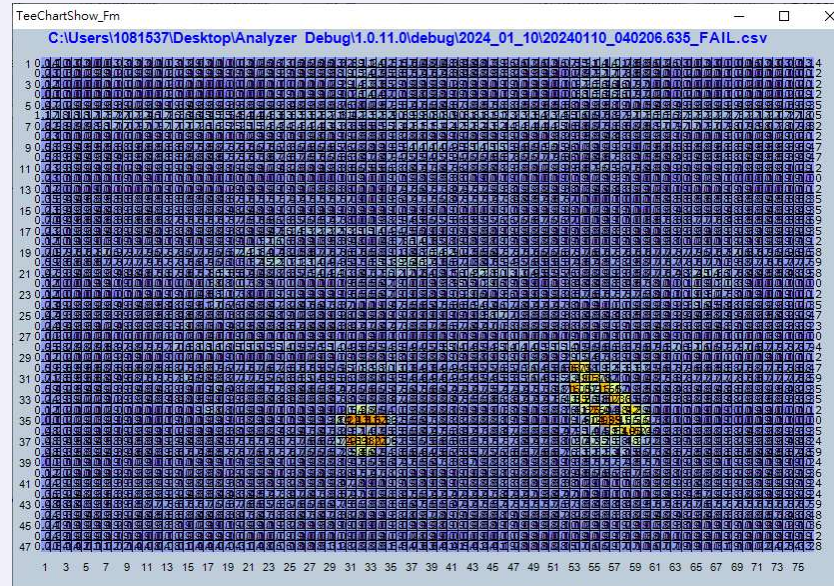
➤ Step3> Click the file in the file list field and right-click to choose “Show Data”



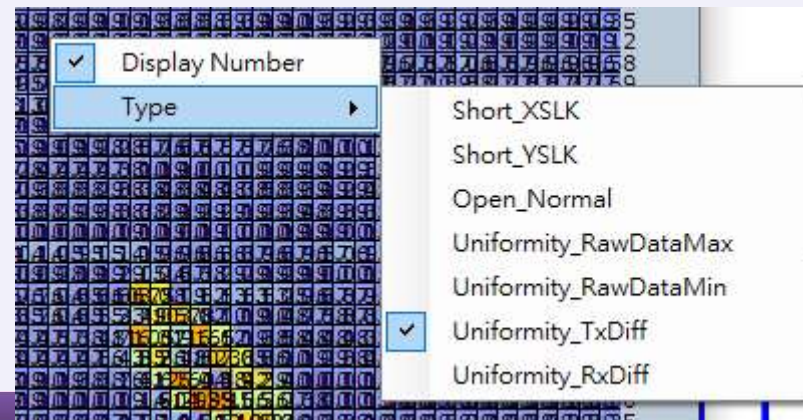
“Data Distribution” Page - Functional Description (Cont.)

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➤ Step4> Pop-up a new window



➤ Step5> Right-Click to switch the data type



“Data Distribution” Page - Functional Description (Cont.)

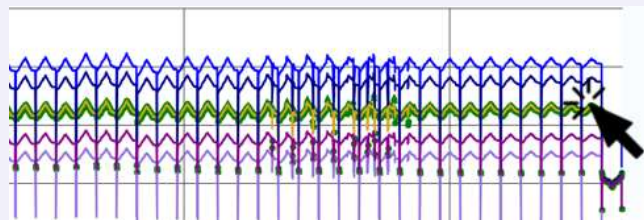


❖ List the failed files.

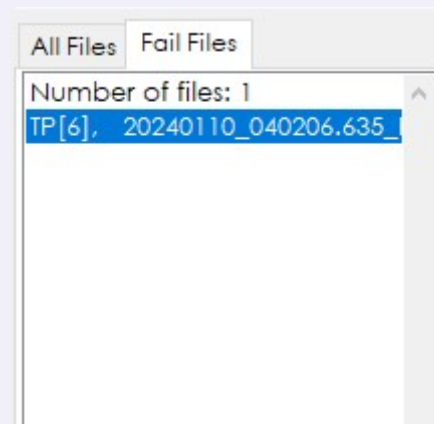
➤ Step1> Choose the data type



➤ Step2> Click any node you want to get it's information



➤ Step3> Choose the “Fail Files” tab



“Data Distribution” Page - Functional Description (Cont.)

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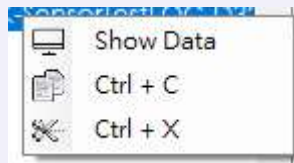
❖ List the failed files in each test item.

❖ Collect the failed files.

➤ Set the collection path:

File Collection Path:  C:\Users\1081537\Desktop\Analyzer Debug\1.0.11.0\TXRX_Diff\collection

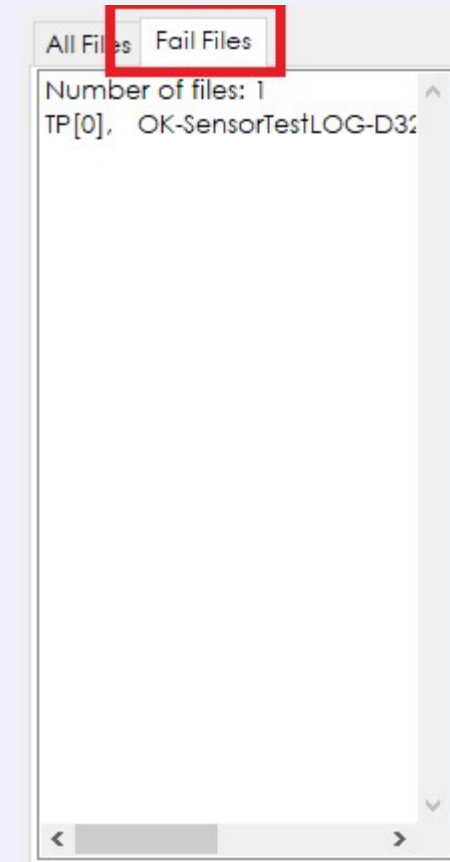
➤ Right-click on failed file , you can do:



- *Ctrl+C: copy the file to collection path*
- *Ctrl+X: cut down the file to collection path*

❖ Generate a file list.

➤ Click “GetList”, then Output.txt is in the collection path

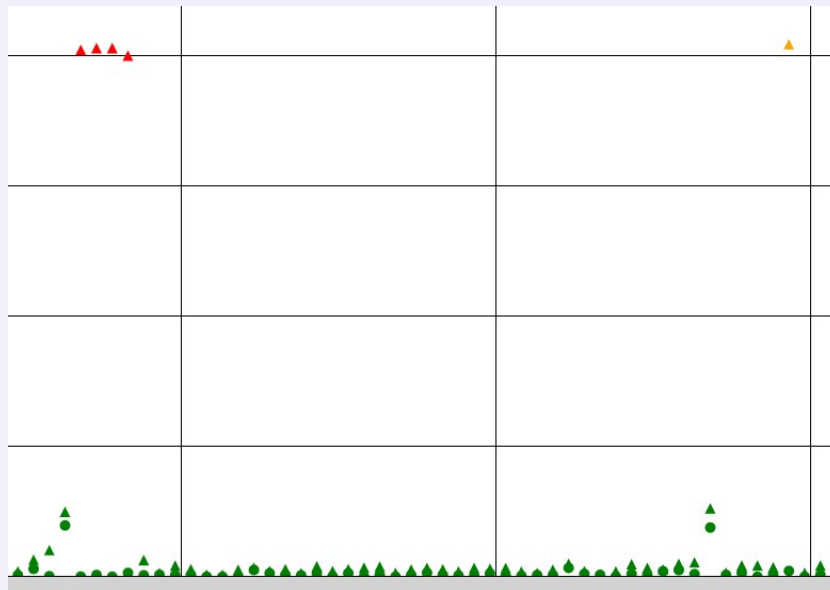


“Data Distribution” Page - Functional Description (Cont.)

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❖ Judge the tolerance in Tx / Rx Diff

- Tx : Continuous **X-axis** direction
- Rx : Continuous **Y-axis** direction



Tolerance: 3 → 5



All Nodes Setting:

Node_Tol.:

Set

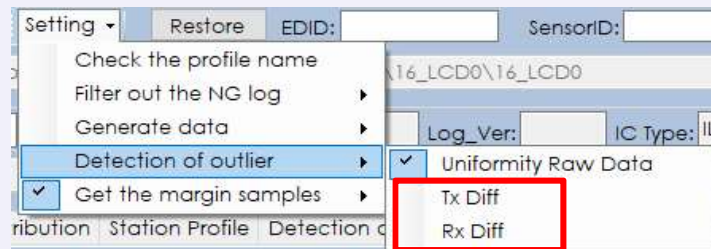
Red Point: fail
Yellow Point: only value fail
Green Point: pass

“Detection of Outlier” Page - Functional Description

/  Innovation

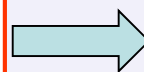
❖ Add Tx / Rx Diff data to do outlier judgement

➤ Enable



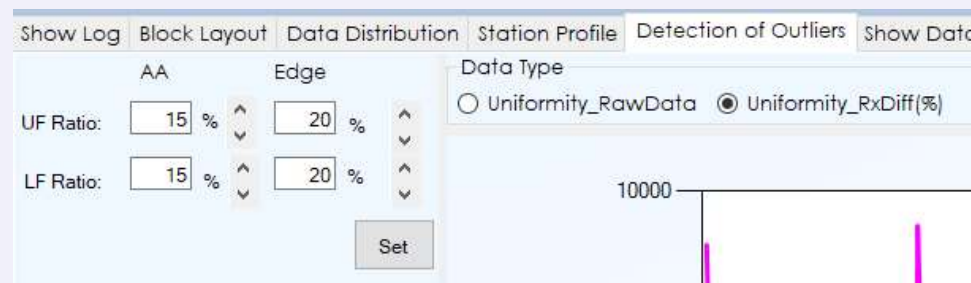
➤ Setting

```
[Outlier_Detection_Setting]
Uniformity_Enable=True
TxDiff_Enable=False
RxDiff_Enable=False
UF_Ratio=15%;15%;15%;
UF_Edge_Ratio=20%;20%;20%;
LF_Ratio=15%;15%;15%;
LF_Edge_Ratio=20%;20%;20%;
```



XX_Ratio = RawData;TxDiff;RxDiff

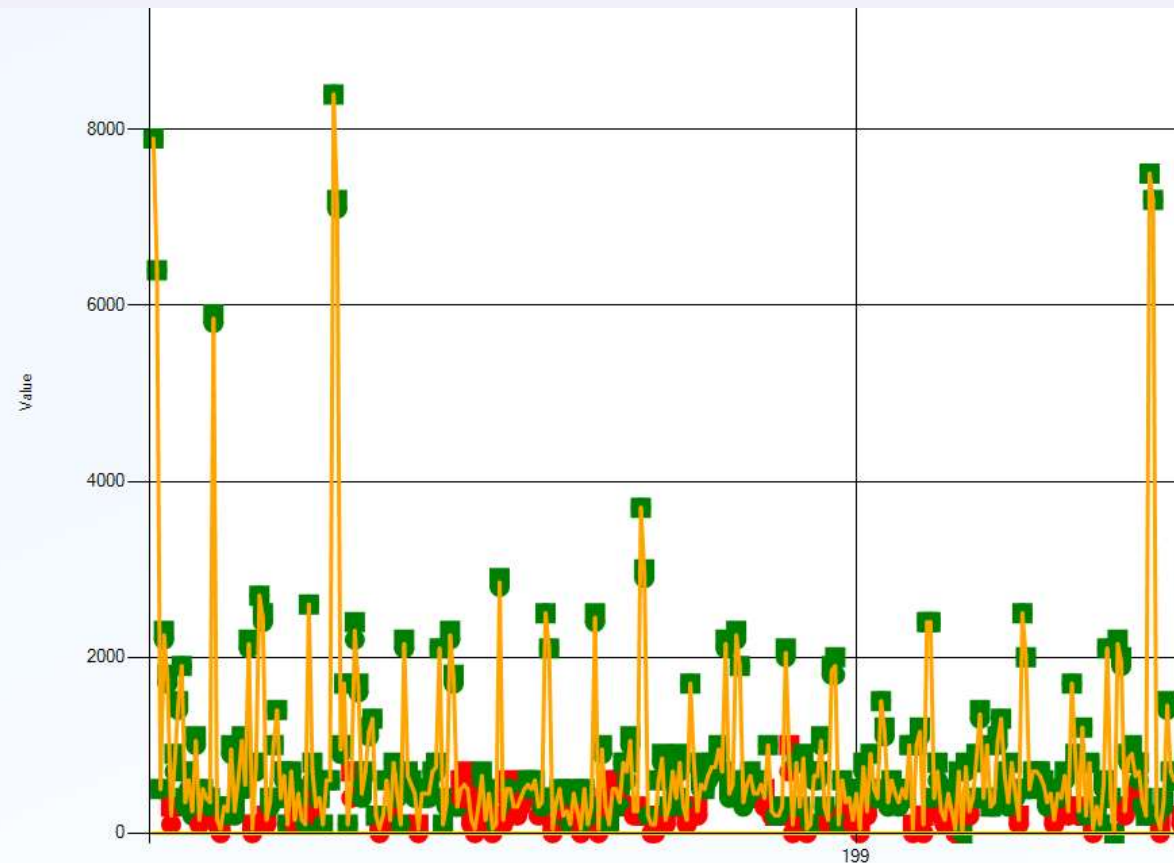
➤ Display: Change the data type to set the ratio.



“Detection of Outlier” Page - Functional Description

/  Innovation

- ❖ Show the average which is after outlier judgement.
- ❖ List the failed files.



Upgrade the Profile

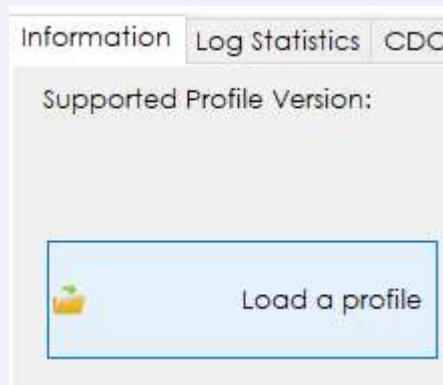
I ❤️ Innovation

❖ Purpose

- Upgrade the profile version to the latest version .

❖ Action

- Step1> Go to “Information” page
- Step2> Click “Load a profile” and assign the file you want to upgrade

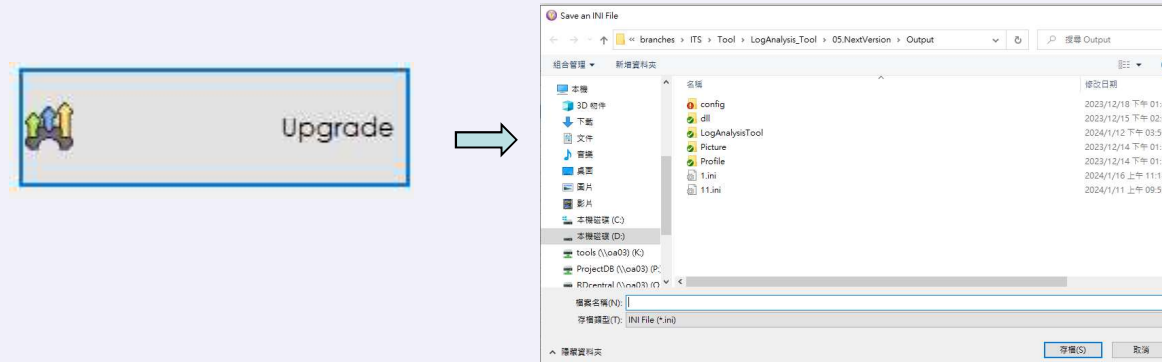


- Step3> You will get the profile information

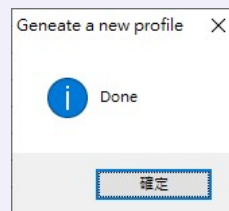


Upgrade the Profile (Cont.)

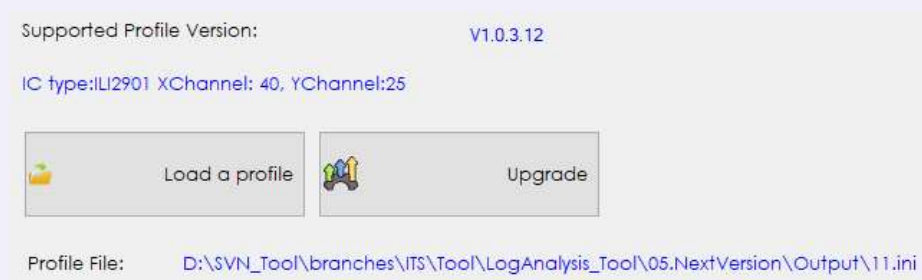
- Step4> Click “Upgrade” and assign the new file path.



- Step5> If the action is successful, you will get the “done” window.



- Step6> you will get the newer profile information



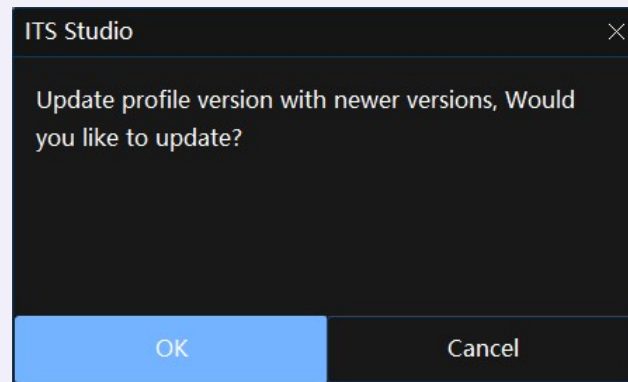
Sensor Test Setting in ITS Tool

I ❤️ Innovation

❖ Update the older profile to V1.0.3.12

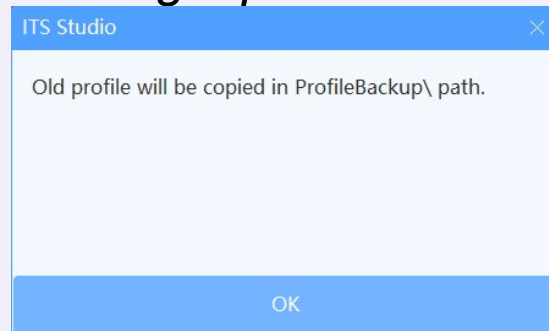
➤ When

- *Load a profile*
- *Entry to setting page*



➤ Backup

- *The origin profile will backup to ProfileBackup*

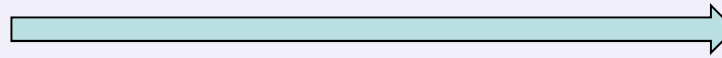


Sensor Test Setting in ITS Tool (Cont.)

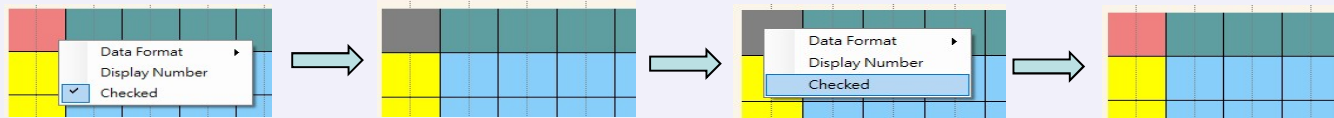
➤ Action

- Edit the block layout

- Add
- Modify
- Remove



- Unchecked/Checked a node



- Modify the value

- Case1, profile didn't be generated form log analysis tool

Threshold

Avg: -1

Max: 4500 Min: 500

Set

- Case2, profile was generated form log analysis tool, you must add or modify the block

Threshold

Avg: 2259

Max: 2598 Min: 1920

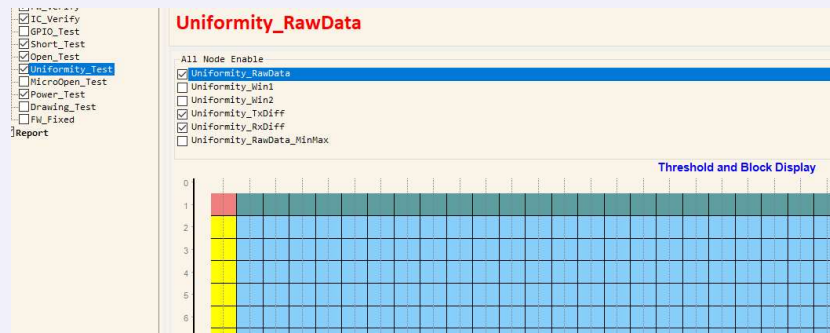
Idx	Max	Min
A0	20%	20%
A1	20%	20%
A2	20%	20%
A3	20%	20%
A4	15%	15%
A5	20%	20%
A6	20%	20%
A7	20%	20%
A8	20%	20%

Add Remove

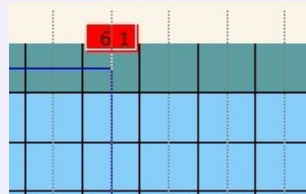
Modify

Sensor Test Setting in ITS Tool (Cont.)

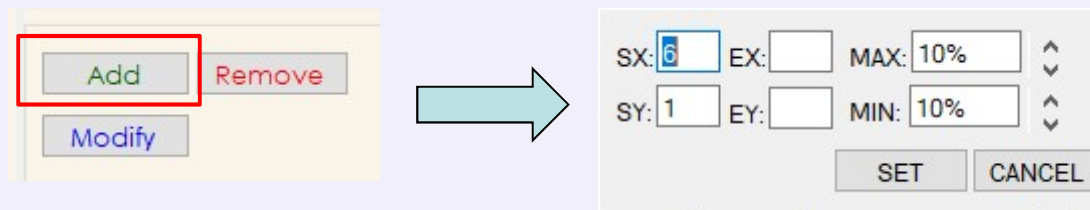
- How to add a block to modify the maximum value and the minimum value?
 - Step1> go to editing screen of spec.



- Step2> Click the node you want to add a block until a red label appears.

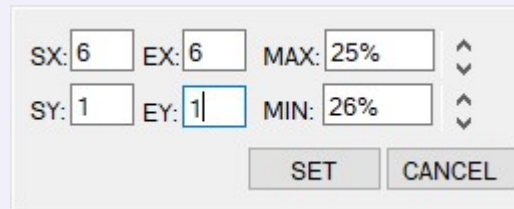


- Step3> Click the “Add” button then pop-up a window

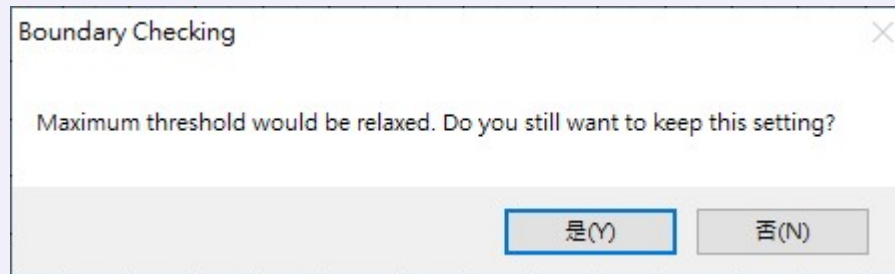


Sensor Test Setting in ITS Tool (Cont.)

- Step4> Set the start and end positions and value then click “SET” button to finish this action



- Step5> pop-up a reminder window then click “Y”



- Step6> you will see a new block

Idx	Max	Min
A0	20%	20%
A1	20%	20%
A2	20%	20%
A3	20%	20%
A4	15%	15%
A5	20%	20%
A6	20%	20%
A7	20%	20%
A8	20%	20%
A9	25%	26%

