

**OMC System Software  
High-performanceHMI  
Report Software  
User Manual  
IM41S67-E**

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# Report Software

## Section 1 Overview

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In industrial control system, report is a very important and frequently used data record tool. It is usually used to record important system data and field data for engineers to check system status or technical analysis.

Report software is one of High-performanceHMI software components, including three parts: report configuration software, report browse and report server.

Report configuration software (Normal mode and Excel mode) has window graphic user operation interface. The configured report file should be saved in the “rtRpt” subfolder of the system configuration folder.

Report system generates reports by the report server, and it starts up automatically following the supervision software by setting the report server

Report browse supports browsing and editing the generating/generated reports.

### 1.1 Performance Specification

- The system exports (exports in several seconds in turn) or prints ten pieces of reports in one minute at most.
- One computer configures and generates 100 pieces of reports at most when data acquisition and report export are both staggered.
- The whole report acquires 1000 statistic items at most, and data of 500 tags at most.
- One report project supports 200 events or expressions at most.
- If there is only one report in the project, the number of rows of the report should not be more than 1000 and number of columns should not be more than 100.
- One report acquires data of 200 tags at most simultaneously, and each tag only has one filling item. If the minimum acquisition interval is not more than 5 seconds, it only acquires data of tags not more than 50.
- High-performanceHMI supports hot-backup of report  
By hot-backup of report, High-performanceHMI can record from the last record in the report while the real-time monitoring restarted after exit.  
By default, report supports hot-backup only if the real-time monitoring restarted in 10 minutes.

## 1.2 Report Configuration Steps

1. Create the report file: Add the report configuration and set the report filename in the designated operation team to enter report editor.
2. Edit the report format: Design and edit the whole format of the report and the report text.
3. Definite the event: Set the data recording event and exporting event of the report.
4. Set the export: Designate an export event for each report.
5. Fill the cell: Use the filling function in the format designed report to set the report record.
6. Set the project: View the relevant information of the project.
7. Save and compile: Transform the configuration information to the compilation file when the configuration file is being saved so that the report will be generated automatically when the report server starts up.


## Section 2 Normal Mode Report Configuration

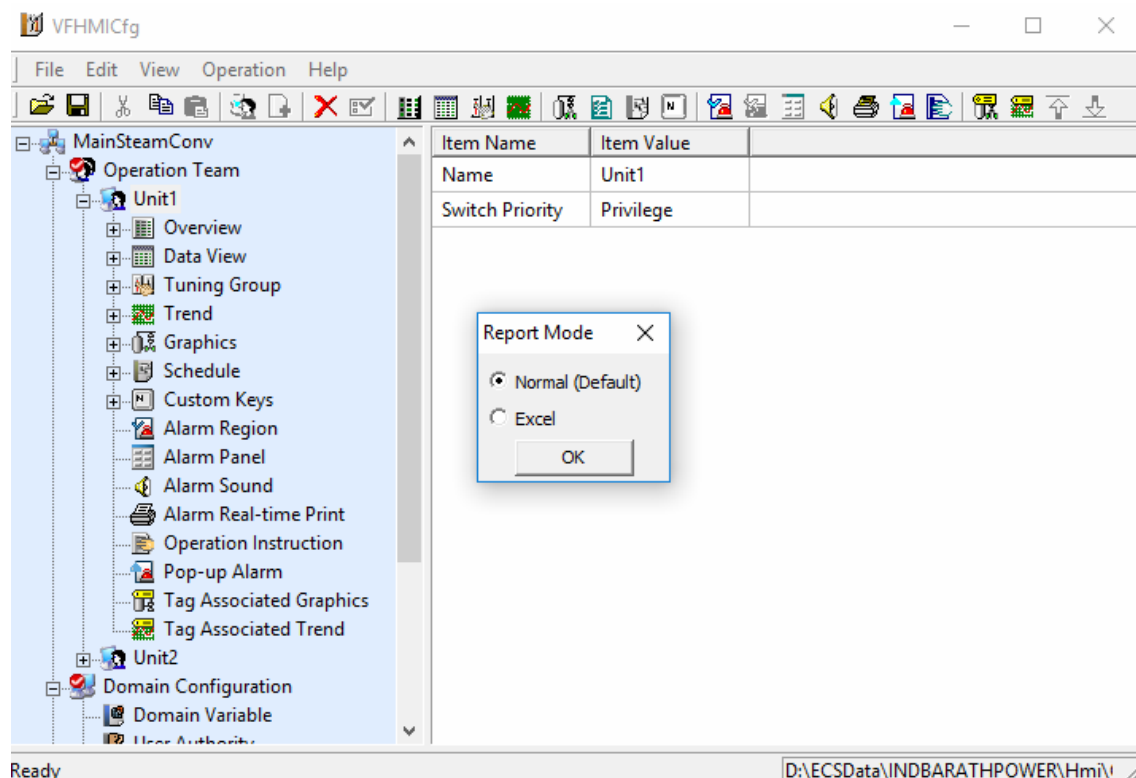


### Tips:

- If there is no report (even no report is created and then deleted) in any operation team, a report mode select dialog will be pop up when adding report to operation team, options include general report and Excel report.
- All operation teams in one operation domain can only use one report mode.

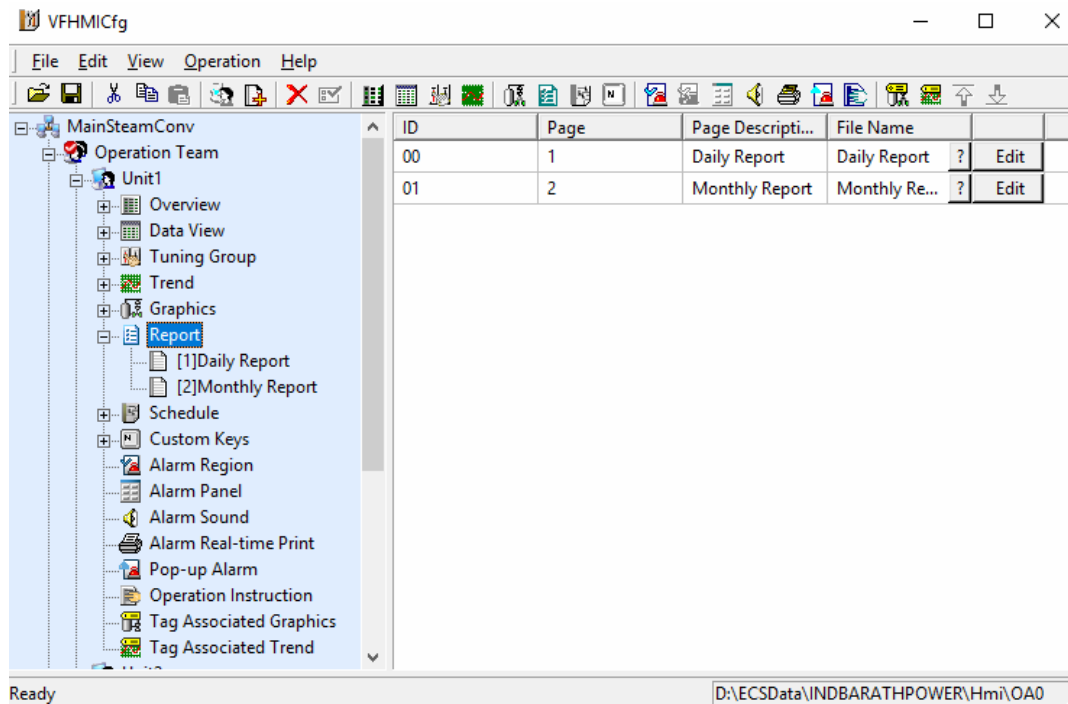
### 2.1 Start up Report Builder in Normal Mode

1. Select an operation team in the supervision configuration interface. Select the menu command "Add Report" in the pop-up right-click menu or click the icon  on the toolbar and the report mode selection dialog box will pop up, as shown in Figure 2-1.




**Figure 2-1 Operation domain report mode selection**

2. Select "Normal (default)" and click "OK" to add a report, as shown as follows.



**Figure 2-2 Add report**

- ID: It is generated automatically by system and can't be modified.
- Page: It can be changed manually, and users can input a positive integer in the range of 1 to 500.
- Page Description: Page description is "Report N"(N is an ascending in turn positive integer) by default. If the filename is changed, page description will be changed to the same description as the filename automatically.
- File Name: After inputting the filename, the "Edit" button is available. Click the "Edit" button to enter a report editing interface, is shown as follows. Or click the button  to select the existing report.

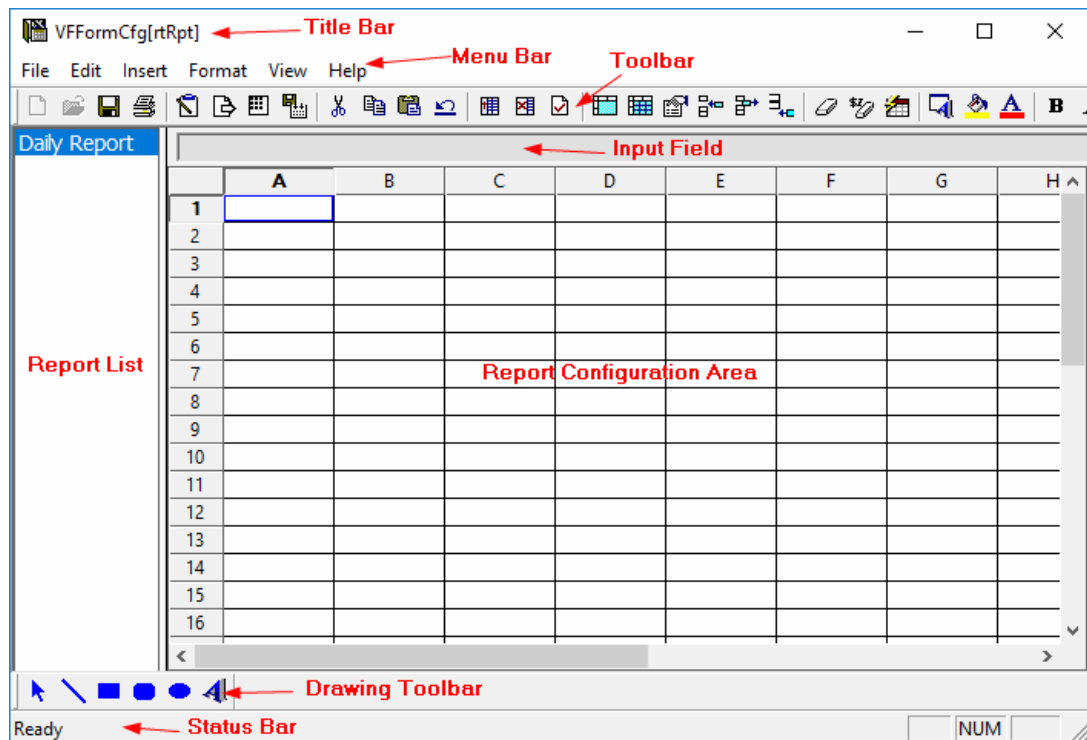




Figure 2-3 Normal report editing interface



**Tip:**























Report name can neither include "'\*/:<>?\\|", nor start or end by space. It cannot end with dot, or take dot as the name.











- Title Bar: display the report information: VFFormCfg[rtRpt]
- Menu Bar: display the summed up and classified menu items including file, edit, insert, format, view and help.
- Toolbar: display some commands (used most frequently) and some complementary commands in the menu items in the form of icon to make users operate easily.
- Input Field: Select a cell, input corresponding characters, click key  to switch the input characters to the left cell where the position corresponds to. Make sure to press Enter or click the key  after characters have been input in the right blank. Otherwise, input characters are in Enable.
- Report List: display the names in the entire report list in this project.
- Report Configuration Area: Work area. The format of the generated report will be as shown here. Contents in the area will be saved in the corresponding report file.
- Drawing Toolbar: Display the drawing tool in the form of icon.
- Status Bar: When the mouse is on the menu command or icon command, the command function will be prompted.



## 2.2 Menu Command/Tool Button list

**Table 2-1 Normal report configuration menu command list**

Menu item		Icon	Function explanation
File	New(Ctrl+N)		Create a new report file to enter the report editing interface. (The function is not available)
	Open(Ctrl+O)		Open the created and saved report file (The function is not available)
	Save(Ctrl+S)		Save the editing report file to the hard disk.
	Save and Compile		Save and compile the current report project
	Event Definition		display the event list of the current project
	Output Settings		display the information of the output setting of the current project
	Fill(Q) (Ctrl+Q)		Fill the selected cell in the pop-up filling dialog box
	Alias Setting		, Search the report by the alias when the report is configured
	Page Settings(U)		Set page format of the report file.
	Print Preview		Preview the actual print effect before printing.
	Print		Print the currently editing report page
	Close Project		Close the current project (The function is not available)
	Exit		stop editing and exit the report editing interface
Edit	Undo (Ctrl+Z)		Undo the last operation (only execute once), and restore to the previous editing status.
	Cut (Ctrl+X)		Copy the content designated by users in the report edit area to the clipboard, and delete the content in this area simultaneously.
	Copy (Ctrl+C)		Copy the designated content in the edit area to the clipboard.
	Paste (Ctrl+V)		Copy the latest content (the content recently cut or copied) in the clipboard to the designated edit area.
	Merge		Merge adjacent basic cells into a combination cell.
	Split		Split the selected combination cell to basic cells.
	Clear		Includes three items: clear all  , clear content  and clear format  . Clear the cell content, format and all (except split) in the selected area.
	Delete		Delete the selected cell, including four kinds of operations: Right cells shift left, Lower cells shift up, whole row and Delete a whole column.
	Add cols or rows at tail		Add a certain number of rows or columns (1~99) behind the last row or column.
	Replace(Ctrl+H)		Search the text content to be changed in the report table and displace it by a new one.
Insert	Report(G)		Insert a report in the current notebook
	Cell		Add a cell in the current position, including four kinds of operation: active cells shift right, active cells shift down, insert a whole row and insert a whole column.
	Drawing Tools		Display or hide the icons of drawing tools.
Forma	Cell Settings		Set format of the selected cells

Menu item	Icon	Function explanation
t	Font Format	Set format of the text content in the cell, including set cell font  , bold <b>B</b> , italic <i>I</i> , underline <u>U</u> and strikeout <del>A</del>
	Foreground Color	Set color of the text in the selected cell 
	Background Color (H)	Set the inner filling color of the selected cell 
	Align	Set alignment mode of the text in the cell, including Align Left  , Center horizontal center  , Align Right  , Align Top  , Center vertical center  , and Align Bottom  .
	Set Selected Format(W)	Set the row height and column width of the selected cell
	Set Default format	Set the default row height and column of the whole report
View	Toolbar	When the item is selected (ticked off), the toolbar is displayed in the corresponding position in the interface. Otherwise, hidden.
	Status Bar	When the item is selected (ticked off), the status bar is displayed in the corresponding position in the interface. Otherwise, hidden.
	Show Left Column	When the item is selected (ticked off), the left column is displayed in the corresponding position in the interface. Otherwise, hidden.
Help	About SCFormEx 	Provide version and copyright information of the report configuration software.

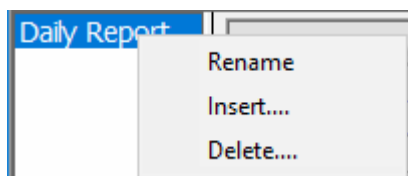
## 2.3 Normal Mode Report Format Making Tool

The first step of configuring reports is to make the report format. In order to make the report practical and beautiful, users can use various kinds of table making tools, character tools, graphics tools and so on provided by the report configuration software.


### 2.3.1 Insert\Delete\Rename

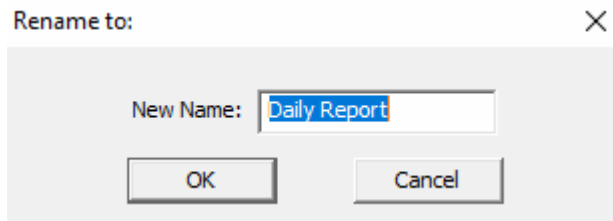
**Rename:** Rename the selected report.

Right-click a report in the report list area and pop up the right-click menu is shown as follows.



**Figure 2-4 Report list right-click menu**


Select the command "Rename" or the button  on the toolbar, and pop up the rename dialog box, as shown as follows.



**Figure 2-5 dialog box "Rename"**

Input the new report name in the input box, click "OK" and the changed report name will be displayed in the report list.


#### **Insert: Insert a new report.**

Select the command "Insert" in the right-click menu as shown in Figure 2-4 or click the button  on the toolbar to insert a new report. The report is named automatically: Grid+Serial Number, is shown as follows.



**Figure 2-6 Report list area**

#### **Delete: Delete the selected report**


Select the command "Delete" in the right-click menu as shown in Figure 2-4 or click the button  on the toolbar, pop up the confirm dialog box . Click "OK" to delete the report.



#### **Tips:**


- When a report is deleted, all the relevant information of the report will be deleted, such as output settings, etc.
- The operations of inserting, deleting and renaming for the report cannot be quashed.

### **2.3.2 Merge /Split Cells**

The command "Merge Cells" is used to merge adjacent basic cells into a combined cell. Drag the selected region to be merged with the mouse and select the menu command **Edit/Merge Cells** or click the icon  to complete the operation.


When the selected region includes part of a combination cell, system will prompt "This operation is forbidden!". For example, the bottom and top cells have been merged and users want to merge the cell on the top right. However, it is allowed to merge the two cells on the top right and bottom right. The new combination cell will reserve the content in the top left cell, and other cells 'content

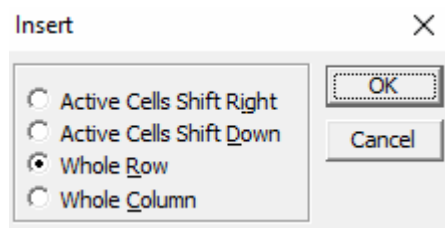
and format will be cleared.

The command "Split" is used to split the selected combination cell to basic cells. Select a combination cell, and select the menu command **Edit/Split** or click the icon  on the toolbar to complete the operation. After splitting, only the corresponding basic cell on the top left reserves content of the original combination cell and other basic cells are blank.

The splitting operation supports splitting several combination cells simultaneously. Select the region which includes all combination cells to be split, and After this operation, only the corresponding basic cell on the top left reserves the original content (The original cell on the top left can be a combination cell), and other cells are blank.

### 2.3.3 Insert/Delete Cells

Inserting cells is used to add a cell in the current selected position. Select the position where the cell will be inserted, click the menu command **Insert Cells** or click the icon  on the toolbar, pop up a dialog box, as shown in Figure 2-7.




**Figure 2-7 dialog box "Insert Cells"**

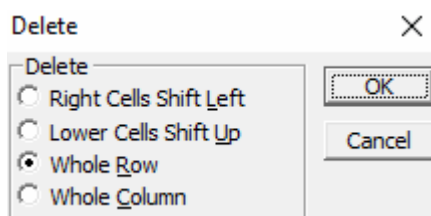
The dialog box includes four options: Active Cell Shift Right, Active Cell Shift Down, Whole Row and Whole Column.

- **Active Cell Shift Right:** Content and format of the selected cell will be moved right and all the cells on the right of the selected cell will also be moved right. The combination cell encountered in the process of moving right will be split. (Prompts: "Attention please, the operation will result in combination cells split."); the cell on the edge of the column (namely the last column) will be moved out of the table.
- **Active Cell Shift Down:** The selected cells are moved down as a whole, and all the cells below the column of the selected cell will also be moved down. The combination cells encountered in the process of moving down will be split (Prompts: "Attention please, the operation will result in combination cells split." The cells on the row edge (namely, the last row) will be moved out of the table.
- **Whole Row:** Insert new rows with the same amount as the selected cells above the selected cells. The relative position of all the rows maintains stable after inserting new rows into the table.
- **Whole Column:** Insert new columns with the same amount as the selected cells on the left of the selected column. The relative position of all the columns maintains stable after inserting new columns into the table.

**Tips:**

- Inserting and deleting operations are used frequently. For example, one-step moving right operation may split several combination cells, so users should think it twice. If the operation result is not what you expect, please restore by undo command or icon.
- When performing the statistical calculation in the report such as summing, averaging value and so on, the operation which may cause the change of the calculation result will be forbidden.

The command "Delete" is used to delete the selected cells. Select the cells to be deleted, click the menu command **Edit/Delete** or click the icon  on the toolbar and pop up the dialog box, as shown in Figure 2-8.



**Figure 2-8 dialog box "Delete Cells"**

The dialog box as shown in Figure 2-8 includes four kinds of operations: Right Cells Shift Left, Down Cells Shift Up, Whole Row and Whole Column. The selected items as shown in Figure 2-9 are to be deleted. Four kinds of operations and their results are discussed in the following.

	A	B	C	D	E
1	1A	1B	1C	1D	1E
2	2A	2B	2C	2D	2E
3	3A	3B	3C	3D	3E
4	4A	4B	4C	4D	4E
5	5A	5B	5C	5D	5E
6	6A	6B	6C	6D	6E
7	7A	7B	7C	7D	7E
8	8A	8B	8C	8D	8E
9	9A	9B	9C	9D	9E
10	10A	10B	10C	10D	10E
11	11A	11B	11C	11D	11E
12	12A	12B	12C	12D	12E
13	13A	13B	13C	13D	13E
14	14A	14B	14C	14D	14E
15	15A	15B	15C	15D	15E
16	16A	16B	16C	16D	16E

**Figure 2-9 Select the deletion region sketch map**

**Right Cell Shift Left:** The selected cell area (includes the combination cell) will be deleted, and all the cells on the right of the row of the selected area will be shifted left. Size and position of other cells will maintain stable. The combination cells encountered in the process of shifting left will be split. (System will prompt); Cells of the last column will be filled with default format. The result of an example is as shown in Figure 2-10.

	A	B	C	D	E
1	1A	1B	1C	1D	1E
2	2A	2B	2C	2D	2E
3	3A	3B	3C	3D	3E
4	4A	4B	4C	4D	4E
5	5A	5B	5C		
6	6A	6B	6C		
7	7A	7B	7C	7D	7E
8	8A	8B	8C	8D	8E
9	9A	9B	9C	9D	9E
10	10A	10B	10C	10D	10E
11	11A	11B	11C	11D	11E
12	12A	12B	12C	12D	12E
13	13A	13B	13C	13D	13E
14	14A	14B	14C	14D	14E
15	15A	15B	15C	15D	15E
16	16A	16B	16C	16D	16E

**Figure 2-10 Result of right cells shifting left**

**Lower Cells Shift Up:** The selected cell area (includes the combination cell ) will be deleted. All the cells below the column of the selected area will be shifted up, and size and position of other cells will maintain stable. The combination cells encountered in the process of shifting up will be split (System will prompt); Cells of the last column will be filled with default format after shifting up. The result of an example is as shown in Figure 2-11

	A	B	C	D	E
1	1A	1B	1C	1D	1E
2	2A	2B	2C	2D	2E
3	3A	3B	3C	3D	3E
4	4A	4B	4C	4D	4E
5	5A	5B	5C	5D	5E
6	6A	6B	6C	6D	6E
7	7A	7B	7C	7D	7E
8	8A	8B	8C	8D	8E
9	9A	9B	9C	9D	9E
10	10A	10B	10C	10D	10E
11	11A	11B	11C	11D	11E
12	12A	12B	12C	12D	12E
13	13A	13B	13C	13D	13E
14	14A	14B	14C	14D	14E
15	15A	15B			15E
16	16A	16B			16E


**Figure 2-11 Result of lower cells shifting up**

Whole Row: Delete the row where the selected cell is, and, the relative position of all rows in the table will maintain stable after the deletion and all rows below will be shifted up.

Whole Column: Delete the column where the selected cell is and the relative position of all columns in the table will maintain stable after the deletion.

### 2.3.4 Add/Delete Rows (Columns)

The command "Add Cols and Rows" is used to add a certain number of rows or columns (1~99) behind the last row or column. It expands the report table range while maintaining the original report content. Users can add rows or columns randomly. If the number of rows or columns to be added exceeds 99, users need to add them for several times. However, users are suggested not to set too many rows or columns in a table, for this not only influences the system response speed but also it is difficult for the operation management. Click the menu command **Edit/ Cols and**

**Rows** or click the icon  on the toolbar, and a dialog box of "Add Cols and Rows" will pop up, as shown in Figure 2-12

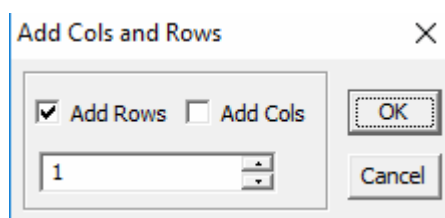



Figure 2-12 Add Rows (Columns) dialog box



**Tip:**

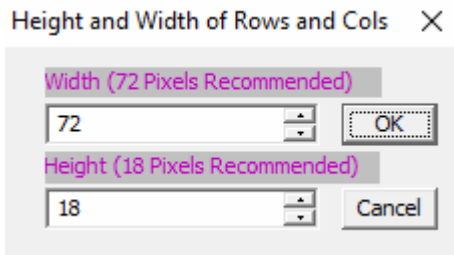
Range of rows or columns of a single report: number of rows ≤ 1024, number of columns ≤ 200.

"Delete Cols and Rows" is used to delete the designated rows or columns. Click the row (column) number to be deleted and click the icon  to delete the selected row (column).

### 2.3.5 Row (Column) size setting

There are two cases for setting row (column) size: the size setting of the selected row (column) and the default setting of the row (column) size.


The size setting of the selected row (column) is used to set the row height and column width for the row (column) of the selected cell. Steps: Select a cell, click the menu command **Format/Set Selected Format (W)** and pop up a dialog box as shown in Figure 2-13. Users can set several rows or columns simultaneously.

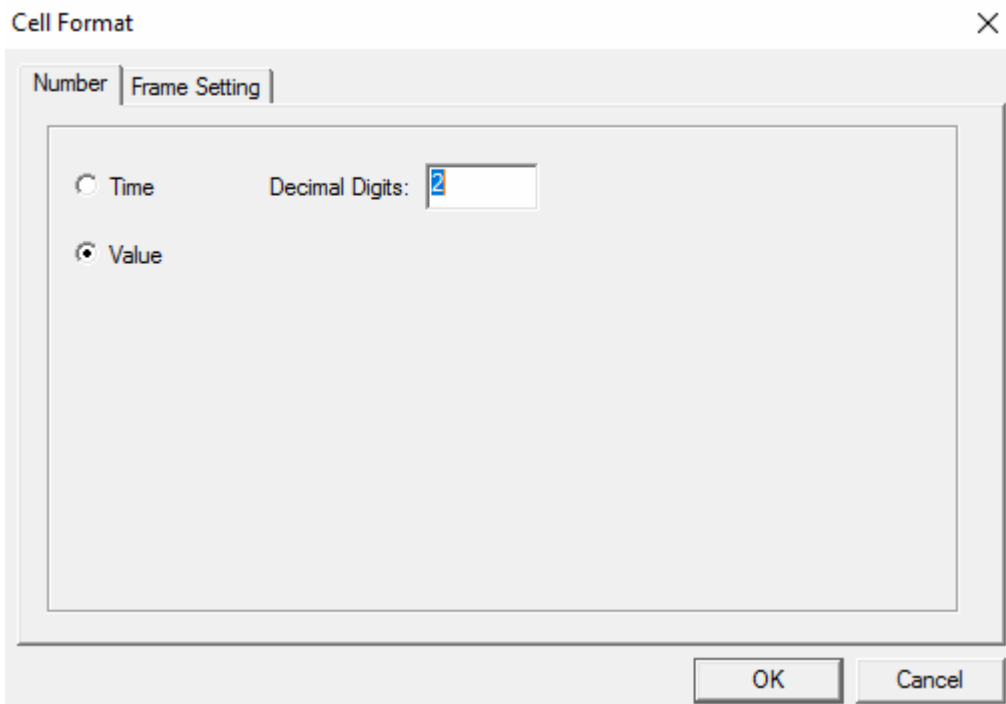


**Figure 2-13 Set row height, column width dialog box**

“Set Default Format” is used to set the default row height and column width for the whole report. It will set the width and height of all cells in the whole report to the same. Respective Height and width setting for the selected row (column) before will be invalid. Click the menu command **Format/Set Default Format** and pop up a dialog box, as shown in Figure 2-13.

### 2.3.6 Cell Format Setting

Format setting is used to set format of the selected cells. Select the cell, click the menu command **Format/Cell** or click the icon  and pop up a cell format setting dialog box as shown as follows.



**Figure 2-14 Cell format setting dialog box**

#### Numeric page

- Time: The default time format is 0000-00-00 00: 00: 00.

When the time (such as instantaneous time) filling operation has been performed in the cell (please refer to 2.5.2 for the instruction of the filling part), if users want to apply the filling content to other cells, users can copy and paste it. However, the pasted content is



without format, and users need to select the pasted cell and set the cell format. Select "Time" in the dialog box as shown in Figure 2-14, otherwise you can't get the expected result.

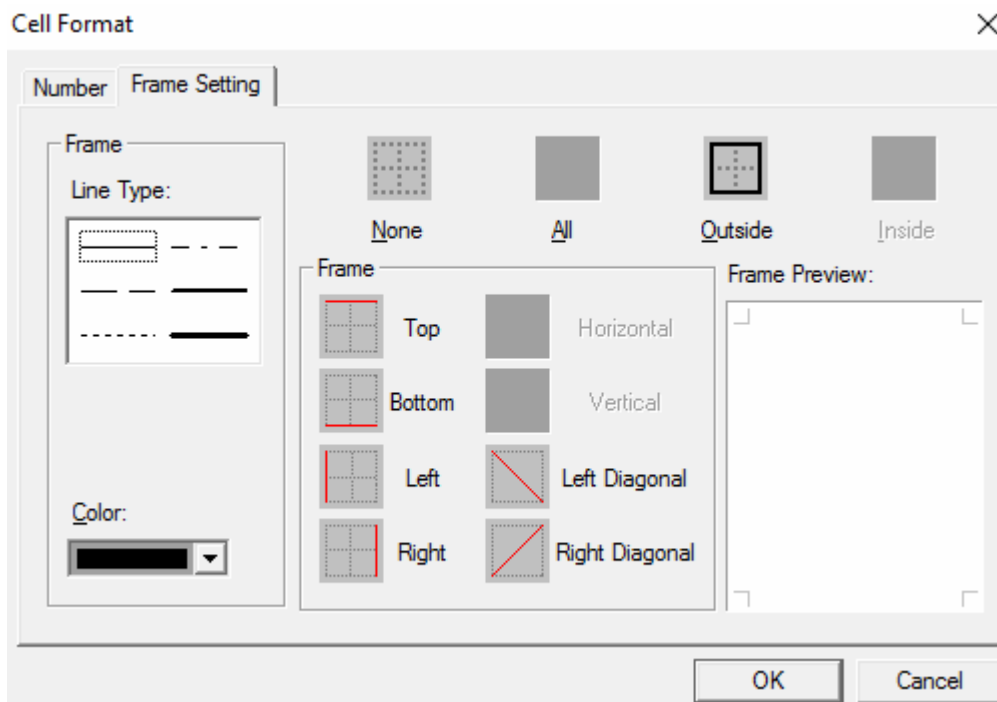
- Value: If Value is selected, users can set the decimal digits in the decimal digits input box.

The original content of cells is as shown in the left of the following figure. Select these cells and select "Value" in the cell format setting dialog box and set the decimal digits as 2. The content in these cells is as shown in the right of the following figure.

1	1.00
2	2.00
3	3.00
4	4.00
5	5.00
6	6.00
7	7.00

**Figure 2-15 Before/After setting format**

### Frame setting page



**Figure 2-16 Frame setting dialog box**

- None: without any frame format
- All: Set all the frames of the selected cells. This operation is not available to set a basic cell format.
- Outside: Set an exterior frame (only one) for the selected cell.

- Inside: Set all the interior vertical and horizontal lines for the selected cells except the exterior frame.

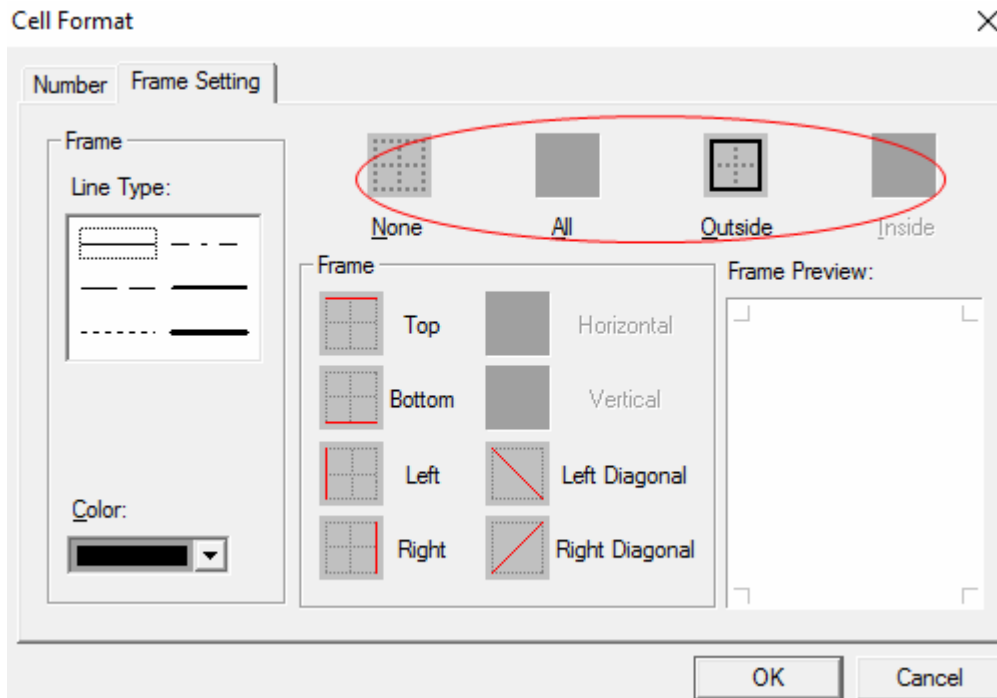
**Tip:**

Only one item of operations above can be selected at one time.

- Top, Bottom, Left, Right: Set the top (bottom, left, right) frame of a cell; Set the top (bottom, left, right) boundary for a region.
- Vertical, Horizontal: Set all the vertical and horizontal lines in the selected region. These two items of operations are not available to set a basic cell.
- Left Diagonal, Right Diagonal: Set the left (right) diagonal for all cells in the selected region.

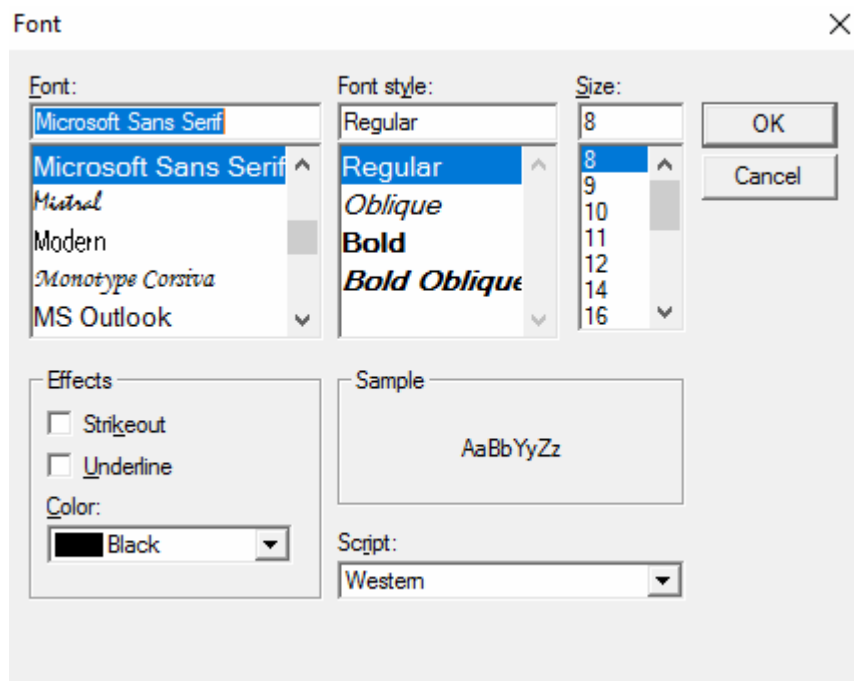
**Tips:**

- Two or more items of operation above can be used simultaneously.
- One item in the red circle and any operations in the frame option can be used simultaneously, is shown as follows.











Before selecting any frame setting, users can select required line type mode and color. Users can view the effect in the format preview box before confirming. Effect sketches are as shown in Figure 2-17, Figure 2-18







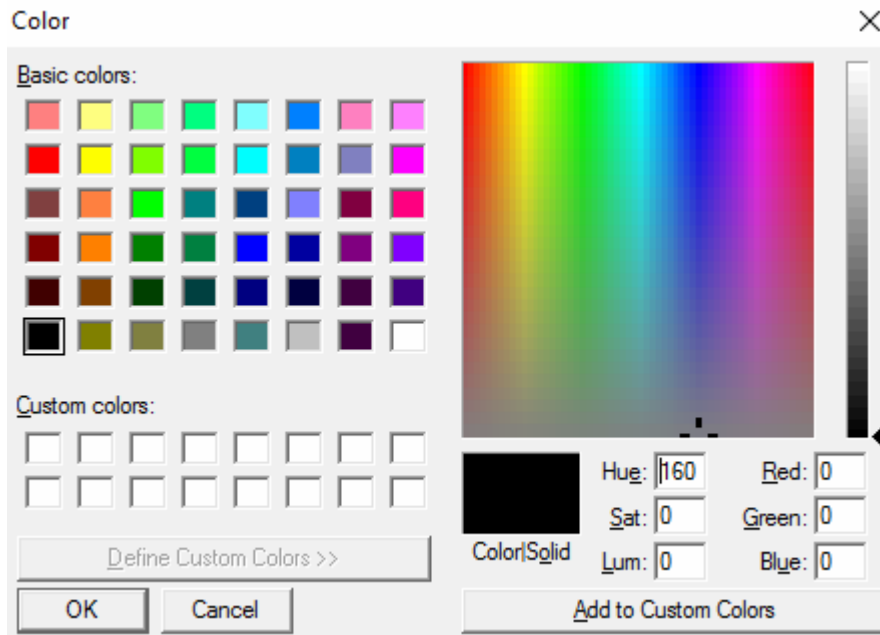
**Figure 2-20 Font setting**

- Bold : Click the icon  to make the font bold.
- Italic : Click the icon  to make the font italic.
- Underline : Click the icon  to underline the text.
- Strikeout : Click the icon  to strikeout the text.


### 2.3.9 Color Setting

Color Setting includes foreground color and background color setting.

Foreground color : Set the color of the text in the cell. Select one region or a cell, click the icon  and pop up the color setting dialog box. Click a color from [Basic Colors] or set different colors by [Define Custom Colors], as shown in Figure 2-21.









**Figure 2-21 Color setting**

Background color : Set the filling color of the selected cell. The setting method is the same with foreground color setting.

### 2.3.10 Align

Align is used to set the alignment mode of text in the cell. Click the row number or column number to select a row or column and align the whole row or whole column. Alignment setting includes six items: Left, Horizontal Center, Right, Top, Vertical center, and Bottom.

- Left : Align the text content in the cell to the left
- Right : Align the text content in the cell to the right
- Horizontal center : Align the text content in the cell to horizontal center
- Vertical center : Align the text content in the cell to vertical center
- Top : Align the text content in the cell along the top edge.
- Bottom : Align the text in the cell along the bottom edge.



**Tip:**





The align operation to the row or column of the basic cell in the emerged cell can't be operated. Otherwise, system prompts: "This operation is forbidden!"

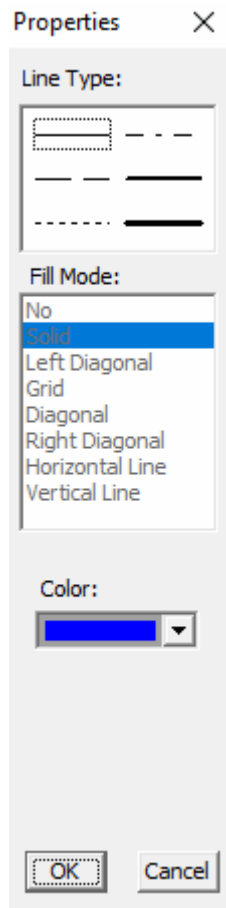
### 2.3.11 Drawing Tool

Figure 2-22 displays the drawing tool icons and there are Close/Open Drawing Function, Draw Straight Line, Draw Rectangle, Draw Round Angle Rectangle, Draw Ellipse and Word Tool from left to right. Click and hold the mouse on the left or right edge to make it in the movable status.





**Figure 2-22 Drawing tool icons**

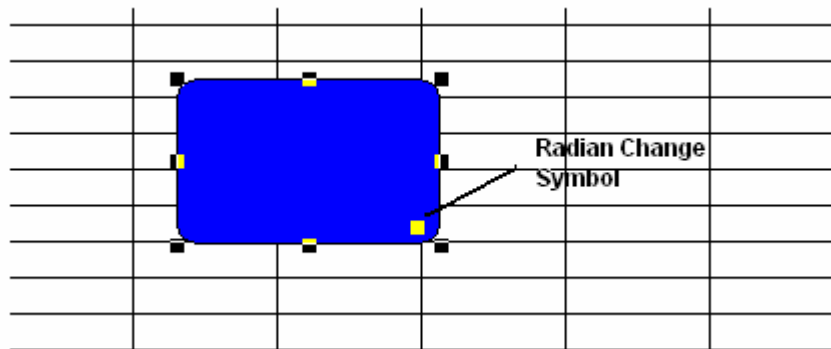
1. Open/Close Drawing Function : Open or close the drawing function. Before drawing, users can click the icon  to make it in the selected status and the report is in the graphics editing status. Click the icon again to stop editing and close the drawing function. When other icons on the drawing toolbar are clicked, the Open Drawing Function icon is also selected and users can draw corresponding graphics in the report directly.
2. Draw Straight Line : Draw all kinds of straight lines when the report configuration.
  - Draw: Click the icon  on the drawing toolbar to make it in the selected status; click anywhere in the edit area of the report and a straight line will appear there.
  - Change Shape: Place the arrow on the selected symbol of either end of the straight line (click the straight line or select in selection box). The arrow turns to pointer. Hold the left key down and drag it to change the length and angle of the straight line.
  - Move: Select a straight line, and hold the left key down to move it.
  - Property Setting: Double click a straight line and pop up a graphics properties setting dialog box, where line type styles and colors can be selected.







**Figure 2-23 Graphics property setting**

3. Draw A Right-angle Rectangle  : Draw various right-angle rectangles in the report.
  - Draw: Similar with drawing straight line. Please refer to the straight line drawing instruction.
  - Change Shape: Select a right-angle rectangle and, place the arrow on any selected symbol (when the cursor turns to pointer). Hold left key down and drag it to change shape.
  - Move: Select a right-angle rectangle and click any point of its interior or frame (except the selected symbol) to move.
  - Property Setting: Double click a right-angle rectangle and pop up the graphics property setting dialog box (as shown in Figure 2-23). Users can select the frame line type format, interior filling mode and color (The frame color is the same with the interior filling).
4. Draw Round Angle Rectangle  : Draw various round angle rectangles in the report.
  - Draw: Similar with drawing straight line. Please refer to the straight line drawing instruction.
  - Change Shape: Select a round angle rectangle and place the arrow on any selected symbol (When the cursor changes to pointer). Hold left key down and drag it to

change shape. Note: Figure 2-24 displays the radian change symbol. Place the mouse on the symbol and the mouse changes to cross pointer form. Hold the left key down and drag it to change the radian of the round angle.



**Figure 2-24 Example of radian change symbol**

- Move: same with right-angle rectangle, please refer to above.
  - Property Setting: same with right-angle rectangle, please refer to above.
5. Draw Ellipse : Draw various ellipse objects in the report.
- Draw: Similar with drawing straight line. Please refer to the straight line drawing instruction.
  - Change Shape: Select an ellipse and place the cursor on any selected symbol (when the cursor changes to pointer). Hold left key down and drag it to change shape.
  - Move: Identical to the right-angle rectangle. Please refer to the corresponding instruction.
  - Property setting: Identical to the right-angle rectangle. Please refer to the corresponding instruction.
6. Draw Artistic Word : Add a text box in the report.
- Draw: Click the icon  on the toolbar to make it in the selected status and move the cursor to any position in the report edit area. A rectangle box with a fixed size appears. Double click it, the cursor becomes | and stays on the left edge of the rectangle box. Move the cursor to proper position to input text. Clicking at any position in the report edit area will exit character input. Double click the character editing box to reedit the existing characters.
  - Change Shape: It includes changes of font size and rectangle box size. Click the icon  on the toolbar or the menu command **Format/Font style/Font** to change the font size. The change of rectangle frame size is identical to right-angle rectangle. The font size won't change with the rectangle box.
  - Move: Identical to right-angle rectangle. Please refer to the corresponding instruction. When several graphics overlap, display them according to the sequence they are created. Several graphics (select in selection box) can be moved



simultaneity.

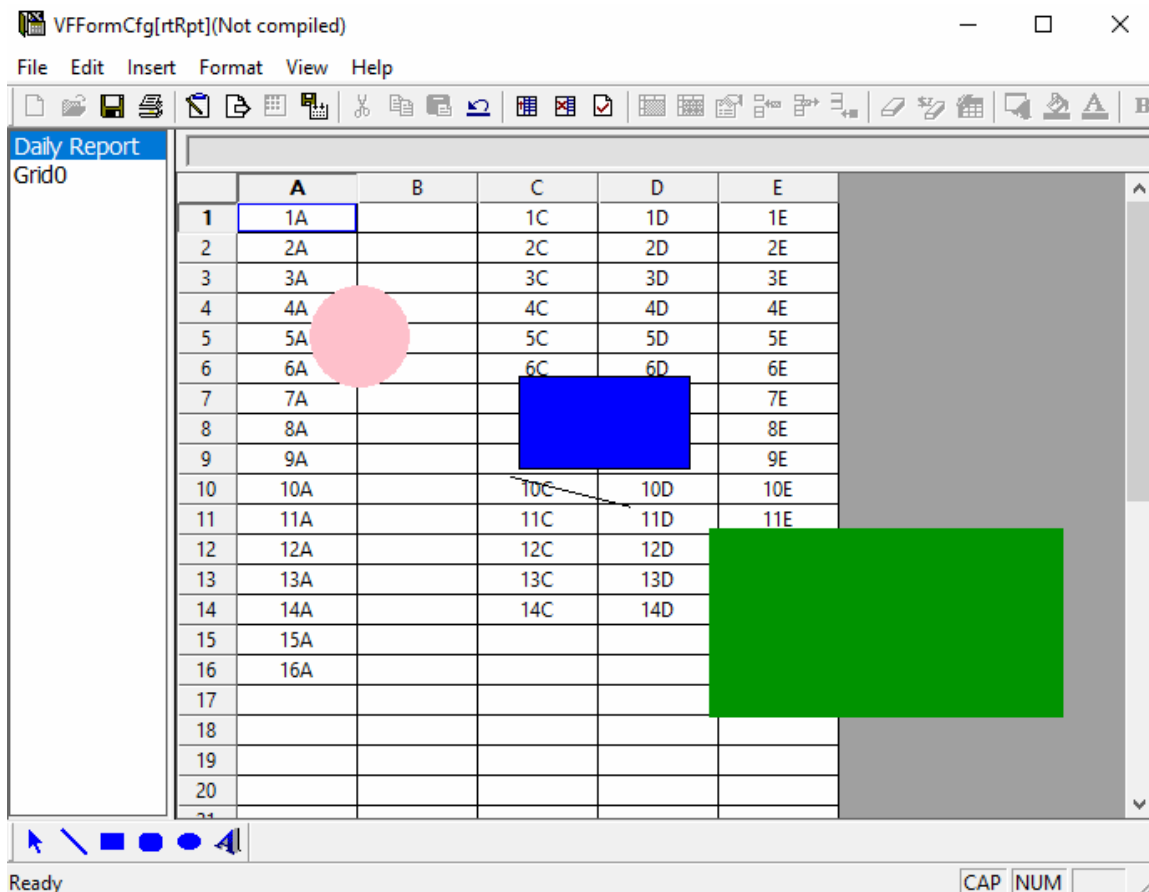
### Notes for graphics drawing:

The drawing function of the report is independent from the editing function. Thus, after drawing has finished, switch to the editing status to insert cells and the drawn graphics remain at the same position, as shown in Figure 2-25.

	A	B	C	D	E		A	B	C	D	E
1	1A	1B	1C	1D	1E	1	1A		1C	1D	1E
2	2A	2B	2C	2D	2E	2	2A		2C	2D	2E
3	3A	3B	3C	3D	3E	3	3A		3C	3D	3E
4	4A	4B	4C	4D	4E	4	4A		4C	4D	4E
5	5A	5B	5C	5D	5E	5	5A		5C	5D	5E
6	6A	6B	6C	6D	6E	6	6A		6C	6D	6E
7	7A	7B			7E	7	7A				7E
8	8A	8B			8E	8	8A				8E
9	9A	9B			9E	9	9A				9E
10	10A	10B	10C	10D	10E	10	10A		10C	10D	10E
11	11A	11B	11C	11D	11E	11	11A		11C	11D	11E
12	12A	12B	12C	12D	12E	12	12A		12C	12D	12E
13	13A	13B	13C	13D	13E	13	13A		13C	13D	13E
14	14A	14B	14C	14D	14E	14	14A		14C	14D	14E
15	15A	15B			15E	15	15A				15E
16	16A	16B			16E	16	16A				16E

**Figure 2-25 Example 1: Relationship between drawing and report editing**

Similarly, after drawing has finished, switch to the editing status to delete cells and the graphics stay at the same position. In this way, the graphics will be outside of the report edit area, as shown in Figure 2-26.



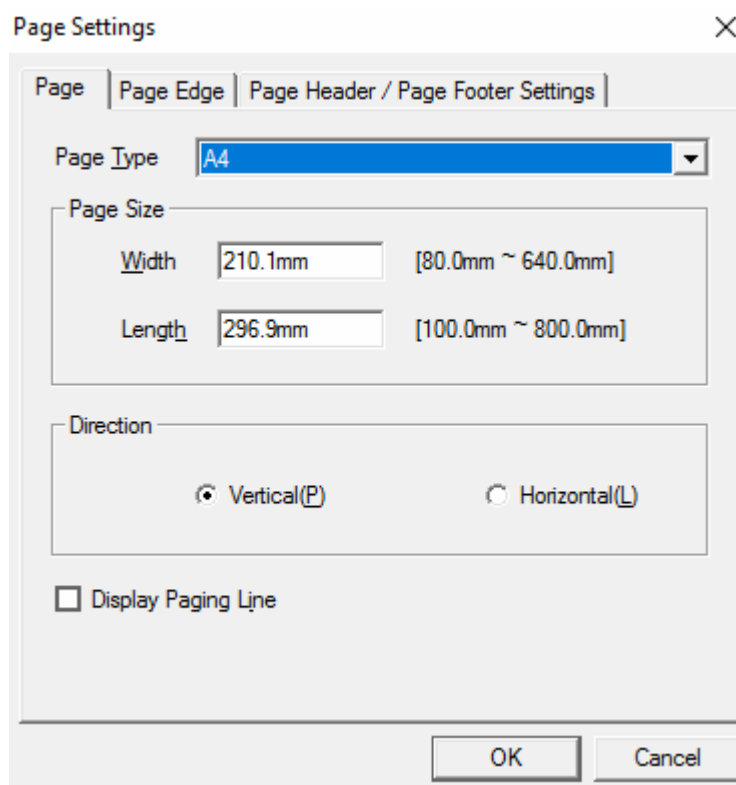
**Figure 2-26 Example 2: Relationship between drawing and report editing**

In this case, users can delete the selected graphics outside the report manually after switching to the drawing status.

Restoring after undoing function is not available for all the graphics operation. Please be cautious.

### 2.3.12 Page Settings

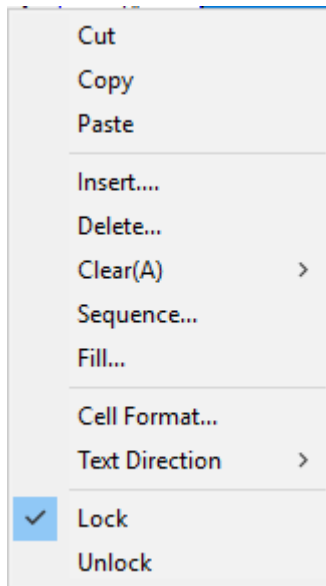
Print page setting is used to set the print page format. Click the menu command **File/Page settings** and pop up a dialog box , as shown in Figure 2-27. Page settings include three items: Page, Page Edge, Page Header/Page Footer Settings which includes Page Type, Size, Margin, Page Header, Page Footer and so on. Users can set them as required.



**Figure 2-27 page setting dialog box**

## 2.4 Normal Report Editing Right-click Menu Functions

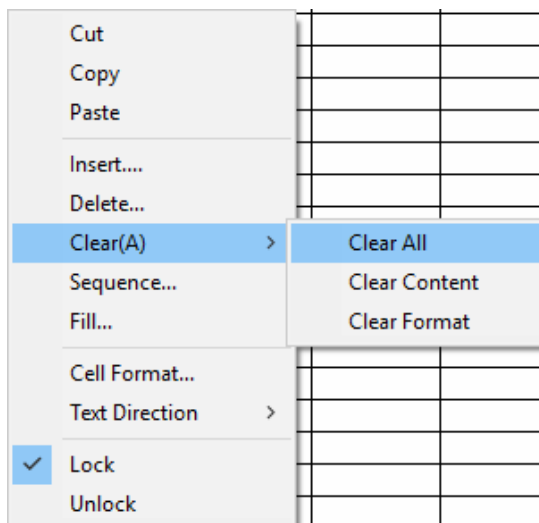
Right-click in the report configuration area and pop up a right-click menu, as shown as follows.






**Figure 2-28 right-click menu**

### 2.4.1 Clear

Clear is used to clear format and content of the cell. Click the command **Clear(A)** and pop up a submenu, including Clear All, Clear Content Del and Clear Format, as shown as follows.



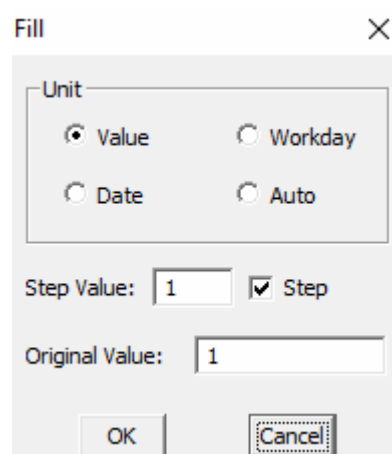
**Figure 2-29 Clear menu**

- Clear All: Clear content and format of the selected cell, same function with the button . Select the cell to be cleared, click the command and pop up a confirm dialog box Click **OK** to clear content and format of the cell.
- Clear Content Del: Clear content of the selected cell, same function with the button . Select the cell whose content needs to be cleared and click the command to clear content.
- Clear Format: Clear the frame of the selected cell, same function with the button . Select the cell whose frame needs to be cleared and click the command to clear

format.

## 2.4.2 Sequence

Sequence is used to generate a string of relate data, such as value, workday, date and so on. Click the Sequence command and pop up a filling sequence dialog box, as shown as follows.



**Figure 2-30 Filling sequence**

- Original value: The value or serial number of the first element in the sequence. It will be filled in the first of the selected cell list.
- Step Value: The dispersion between two adjoining sequence elements or serial numbers.
- Step: If "Step" is selected, the filling value of all selected cells will ascend by the set value. Otherwise, the filling value of all selected cells is original value.
- Value: Fill value in the selected cell and the setting interface is as shown in Figure 2-31. If the original value is 2 and the step value is 3, the results of "Step" selected and not is as shown as follows.

2	2
5	2
8	2
<b>Step</b> 11	<b>Step</b> 2
<b>Selected</b> 14	<b>Not</b> 2
17	<b>Selected</b> 2
20	2
23	2
26	2
29	2
32	2
35	2
38	2
41	2
44	2
47	2
50	2

**Figure 2-31 Filling sequence unit is numerical value (example)**

- Workday: Fill workday in the selected cell, as shown as follows.

Fill

Unit

☐ Value ☒ Workday

☐ Date ☐ Auto

Step Value: 1 ☒ Step

Original Value: Monday

OK Cancel

**Figure 2-32 Filling sequence unit is working day**

If the workday is selected as filling unit, step value is one workday by default. When the original value is not weekday or weekend, exit the filling sequence setting dialog box by clicking **OK**. When the original value is Monday, the results of "Step" selected and not are as shown as follows.

Monday	Monday
Tuesday	Monday
Wednesday	Monday
<b>Step</b> Thursday	<b>Step Not</b> Monday
<b>Selected</b> Friday	<b>Seleted</b> Monday
Saturday	Monday
Sunday	Monday
Monday	Monday
Tuesday	Monday
Wednesday	Monday
Thursday	Monday
Friday	Monday

**Figure 2-33 Filling sequence unit is working day (example)**

- Date: Fill date in the selected cell, as shown as follows.

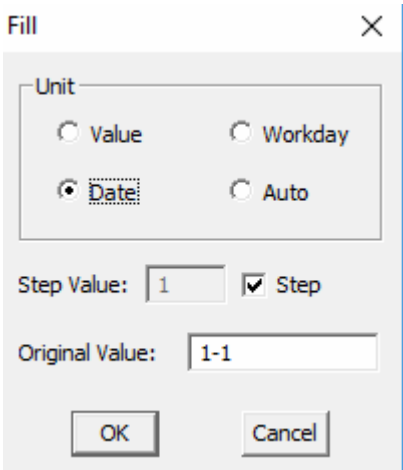


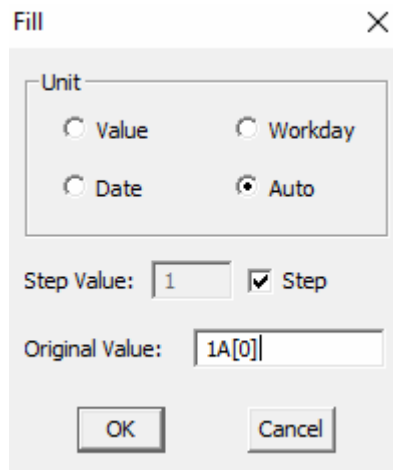
Figure 2-34 Filling sequence unit is date

If date is selected as the filling unit, step value is one day by default. When the original date exceeds the maximum days of the current month or the format is not up to the standard, exit the filling sequence setting dialog box by clicking “OK”. If the original value is Feb. 20, the results of "Step" selected and not are as shown as follows.

2-20	2-20
2-21	2-20
2-22	2-20
2-23	2-20
2-24	2-20
2-25	2-20
2-26	2-20
2-27	2-20
2-28	2-20
3-1	2-20
3-2	2-20
3-3	2-20
3-4	2-20

Figure 2-35 Filling sequence unit is date (example)

- Auto: Fill the table according to the content of the first selected cell automatically (the serial number will increase automatically). If the content of the first selected cell is Wednesday, as shown as follows.



**Figure 2-36 Filling sequence unit is auto**

If Auto is selected as the filling unit, the step value is 1 by default (the serial number will increase 1 per step). If the original value is Wednesday[0], the results of "Step" selected and not are as shown as follows.

Wednesday[0]	Wednesday[0]
Wednesday[1]	Wednesday[0]
Wednesday[2]	Wednesday[0]
<b>Step</b> Wednesday[3]	<b>Step</b> Wednesday[0]
<b>Selected</b> Wednesday[4]	<b>Not</b> Wednesday[0]
Wednesday[5]	<b>Selected</b> Wednesday[0]
Wednesday[6]	Wednesday[0]
Wednesday[7]	Wednesday[0]
Wednesday[8]	Wednesday[0]
Wednesday[9]	Wednesday[0]

**Figure 2-37 Filling sequence unit is auto (example)**



**Tips:**

When refilling the cells that have been filled, pop up a confirm dialog box. The new content will overlay the original one after confirming.

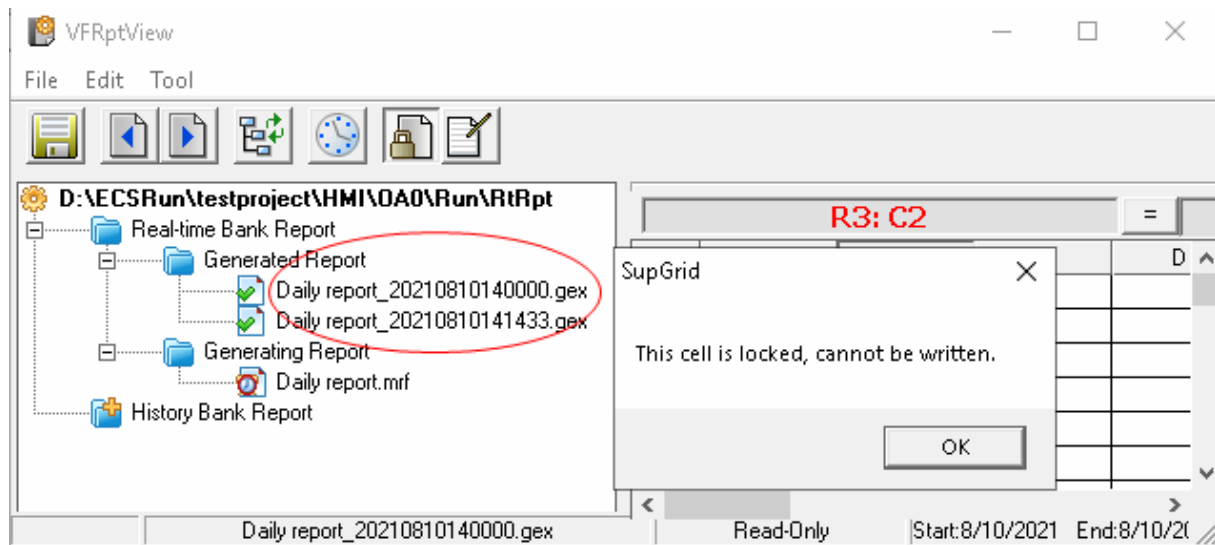
### 2.4.3 Text Direction

Arrange the characters in the selected cell horizontally or vertically. When several cells are selected simultaneously, text direction setting is only available for the last cell.

### 2.4.4 Lock and Unlock

Locking or unlocking the cell need to be viewed in the report browse. In the report browse, the cell in "Lock" status in the "Generating Report" can't be modified even if the "Undo report protection"

operation is performed. System will prompt, as shown in Figure 2-38; The cell in "Unlock" status can be modified after the "Undo report protection" operation.



**Figure 2-38 Cell lock prompt**



**Tip:**

**When performing the report configuration, all cells are locked by default.**

## 2.5 Introduction to Normal Report Editing Functions

### 2.5.1 Event Definition

Event is the triggering condition described by some configuration information. It can generate a group of relevant time points and spans. "Time Point Event" is the event triggered at a group of relevant time points and "Span Event" in a group of relevant spans. "Time- Based Event" is the event triggered according to time and "Expression Event" according to expression.

"Time-Based Event" includes: single event, daily event, weekly event and monthly event. All the events can be either "Time Point Event" or "Span Event" except one time only event which can only be "Time Point Event".

Statistic item "Instantaneous Value" and "Instantaneous Time" are suitable for "Time Point Event" and others are suitable for "Span Event".

Click the menu **File/Event Definition**, pop up a dialog box **Event Settings**, as shown in Figure 2-39. The event list lists the entire defined event and their relevant information. Users can add, delete or modify the defined event.



## Add Event

**Add Event**

Event Information

Name

Description

Trigger Information

☒ One Time Only

☐ Daily

☐ Weekly

☐ Monthly

☐ Expression

Date

Time

OK Cancel

- Event Information

- Name: The event name can't be empty. If the name is empty, system will prompt "Event name should not be empty!" when clicking the button "OK".
- Description: Description information of the event.
- Triggering Information
 

Event includes one time only event, every day event, weekly event, monthly event and expression event according to the event type. In the left column of the triggering information box, users can select the required triggering event type. Here is the introduction below.

  - One Time Only: The event triggered once on time according to time set Figure 2-40 is a one time only event setting interface where users can set "Date" and "Time".
  - Daily: Set day as event record period meaning resetting the event serial number everyday and the event will be circularly triggered on time according to the time setting. Figure 2-41 is the daily event setting interface. Set "Start Time" and "Time Interval". (Note: Time Interval is the interval between two adjoining triggering point in a period.) The default end time is 23:59:59 every day.

The screenshot shows a dialog box titled "Add Event" with a close button (X) in the top right corner. The dialog is divided into two main sections: "Event Information" and "Trigger Information".

**Event Information:** Contains two text input fields labeled "Name" and "Description".

**Trigger Information:** Contains a list of radio buttons for selecting the event type: "One Time Only", "Daily" (which is selected and has a dotted border), "Weekly", "Monthly", and "Expression". To the right of these buttons are two time selection controls: "Start Time" set to "12:00:00 AM" and "Interval Time" set to "01:00:00". Both controls have up and down arrows for adjustment.

At the bottom of the dialog are two buttons: "OK" and "Cancel".

**Figure 2-41 Add event-daily event**

- Weekly: The event record period is a week meaning resetting the event serial number every week. Weekly event is suitable for the triggering condition of the week report. "Weekly event" setting interface is as shown in Figure 2-42. Steps: Tick off to designate the event triggering date(multiple-choice) before the selection box; Set the triggering time of the event in the "Starting" item; If "Stop Time" is selected

(when event is "Span event"), users can set "Stop time" and "Interval Time". Events will be triggered in turn in the designated time range according to the designated interval time. The default end time is 23:59:59 everyday. Otherwise, the event will be triggered once at the start time of the triggering date.

The screenshot shows the 'Add Event' dialog box with the following configuration:

- Event Information:**
  - Name: [Empty text box]
  - Description: [Empty text box]
- Trigger Information:**
  - Trigger Type: ☒ Weekly (Other options: One Time Only, Daily, Monthly, Expression are unselected)
  - Days: Monday, Tuesday, Wednesday, Thursday, and Friday are selected with checkboxes. Saturday and Sunday are unselected.
  - Start Time: 12:00:00 AM
  - Stop Time: [Unselected checkbox]
  - Stop Time (if selected): 11:59:59 PM
  - Interval Time: 01:00:00

Buttons at the bottom: OK, Cancel.

**Figure 2-42 Add Event-Weekly Event**

- **Monthly:** The event record period is month. Reset the event serial number every month. Monthly event is suitable for the triggering condition of the month report. "Monthly" setting interface is as shown in Figure 2-43. Steps: First, set the event triggering date and click the date to be designated (multiple-choice). If "Last day" is selected, the event will be triggered on the last day of the month no matter whether it is selected. Second, set "Start Time" to confirm the triggering time of the designated date; If "Stop Time" is selected, users can set "Stop Time" and "Interval Time" and the event will be triggered in the range of designated date and time for several times; the default end time is 23:59:59 every day. Otherwise, the event will be triggered only once at the start time of the triggering date.

**Add Event** ✕

**Event Information**  
Name   
Description

**Trigger Information**  

☐ One Time Only  
☐ Daily  
☐ Weekly  
☒ Monthly  
☐ Expression

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	<input type="checkbox"/> Last day			

Start Time   
Stop Time ☐  
Stop Time   
Interval Time

**Figure 2-43 Add Event-Monthly Event**

- **Expression:** It is used to express complicated events. The triggering condition of the expression is: The value of the expression satisfies the condition defined by the event triggering type. "Expression" setting interface is as shown in Figure 2-44.

**Add Event** ✕


**Event Information**  
Name   
Description

**Trigger Information**  

☐ One Time Only  
☐ Daily  
☐ Weekly  
☐ Monthly  
☒ Expression

Data Source  ...  
Event Type   
Interval Time

**Figure 2-44 Add event-expression event**

Click the button  behind the data input box, pop up the expression editor interface, as shown in Figure 2-45. Please refer to 2.6 for the detailed expression about compiling mode.

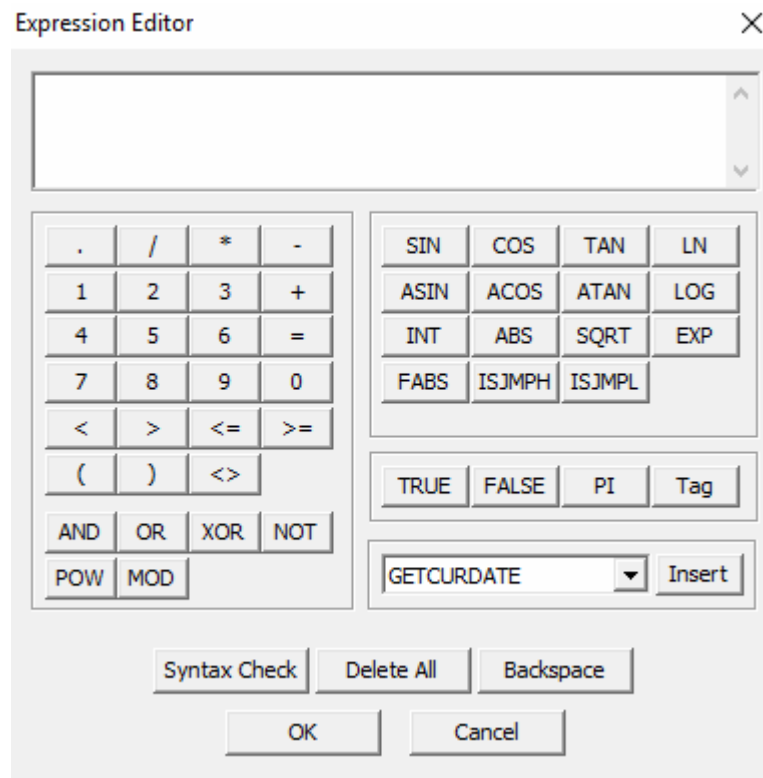


Figure 2-45 Expression Editor



**Tips:**

- The expression editor supports logic operation, arithmetic operation, function operation, relation operation and so on.
- Click or input the operator.
- The expression editor has the syntax check function. After finishing editing, click the button "Syntax Check". If there is syntax error, the expression editor will display the relevant error prompt to make users modify easily.

There are five kinds of triggering event types for the expression event, as shown in Table 2-2. The setting of the time interval is relevant to the selection of the expression event type.

Table 2-2 Expression Triggering Type

Triggering Type	Explanation
On Change	Trigger when the value of the expression jumps.

Triggering Type	Explanation
High Jump	Trigger when the expression/tag jumps up (true).
Low Jump	Trigger when the expression/tag jumps down (false).
Always True	When the expression/tag is always true, trigger (trigger when jump up/down and the expression is true for a span) and users can set the time interval. When the time interval is 0, the effect is the same with triggering when changing.
Always False	When the expression/tag is always false, trigger (trigger when jump up/down and the expression is false for a span) and users can set the time interval. When the time interval is 0, the effect is the same with triggering when changing.

**Tips:**

- If the type of the expression return value is digital, trigger when the value changes from FALSE to TRUE or from TRUE to FALSE.
- If the type of the expression return value is analog, trigger when the value of the analog changes from zero to non-zero or from non-zero to zero.
- If users want to change the judgment on the expression triggering when the return value type of an expression is analog, users can change the return value of the expression to digital by comparison operators (=,<,>,<=,>=,<>). For example, if the return value of TAG("Tag name") is analog, the return value of TAG("Tag name") less than 0.005 is digital.

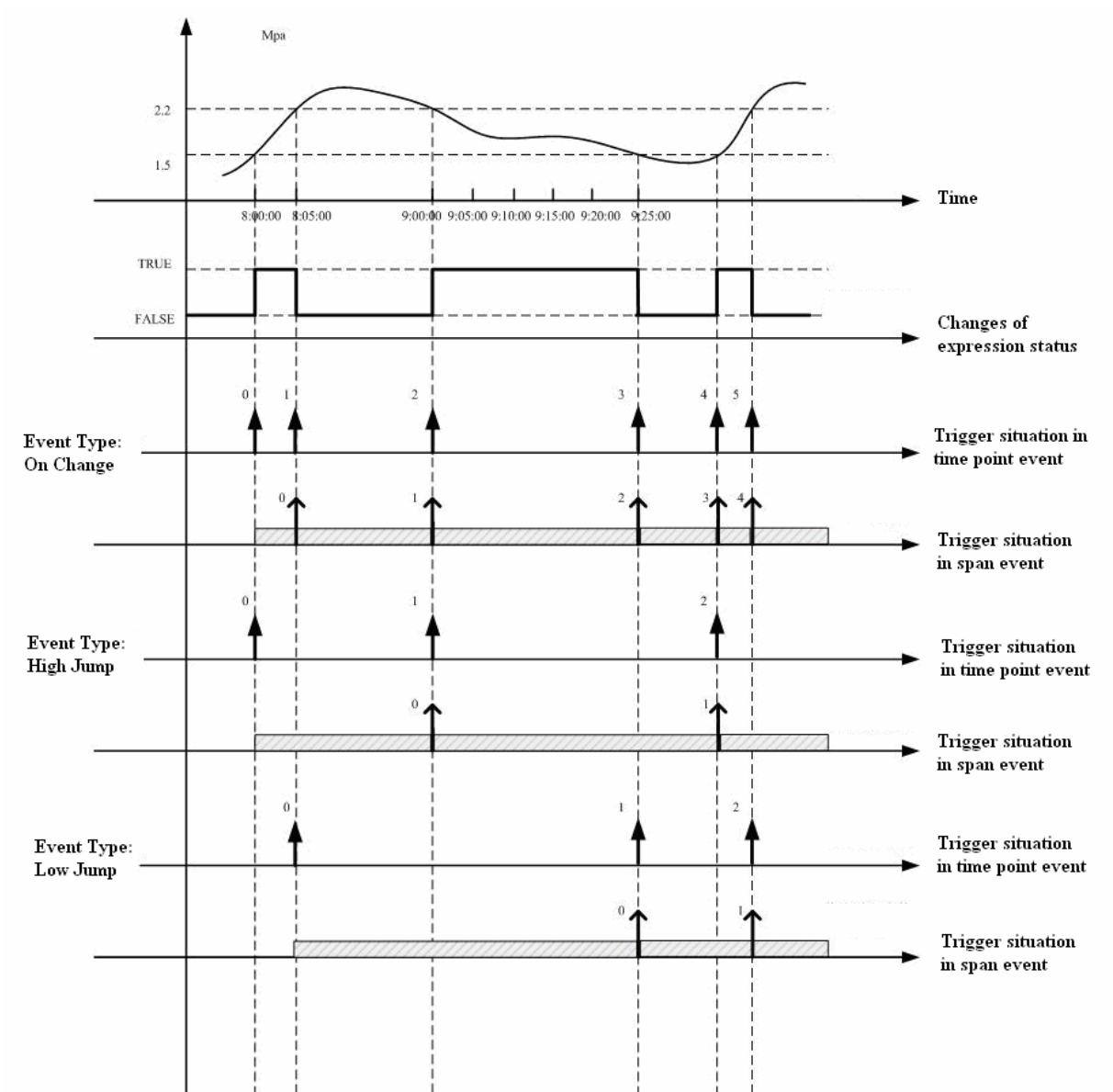
The triggering situation of the expression event will be introduced below by concrete examples.

**Example 1**

The pressure of a pipeline in a project field is expressed by tag PE001. The user defines an expression event and the content of the expression is (TAG ("PE001")>=1.5) and (TAG ("PE001")<=2.2). When the user selects different triggering types, it indicates different meanings.

Concrete meanings and triggering types are shown in Figure 2-46 and Figure 2-47.

The difference between the span event and the time point event: In the report, "Time point event" is triggered at a group of relevant time points while "Span event" in a group of relevant spans. For example, the instantaneous value of tag A in 18:00:00 is a time point event and the average value of tag A between 18:00:00 and 18:59:59 is a span event. In addition, because the span event needs a start time, the start time when the event is triggered is not the record time of the span event. Figure 2-47 displays an event always true triggered by a span event whose interval is 15 minutes. Note the difference with the triggering serial number of the time point event.



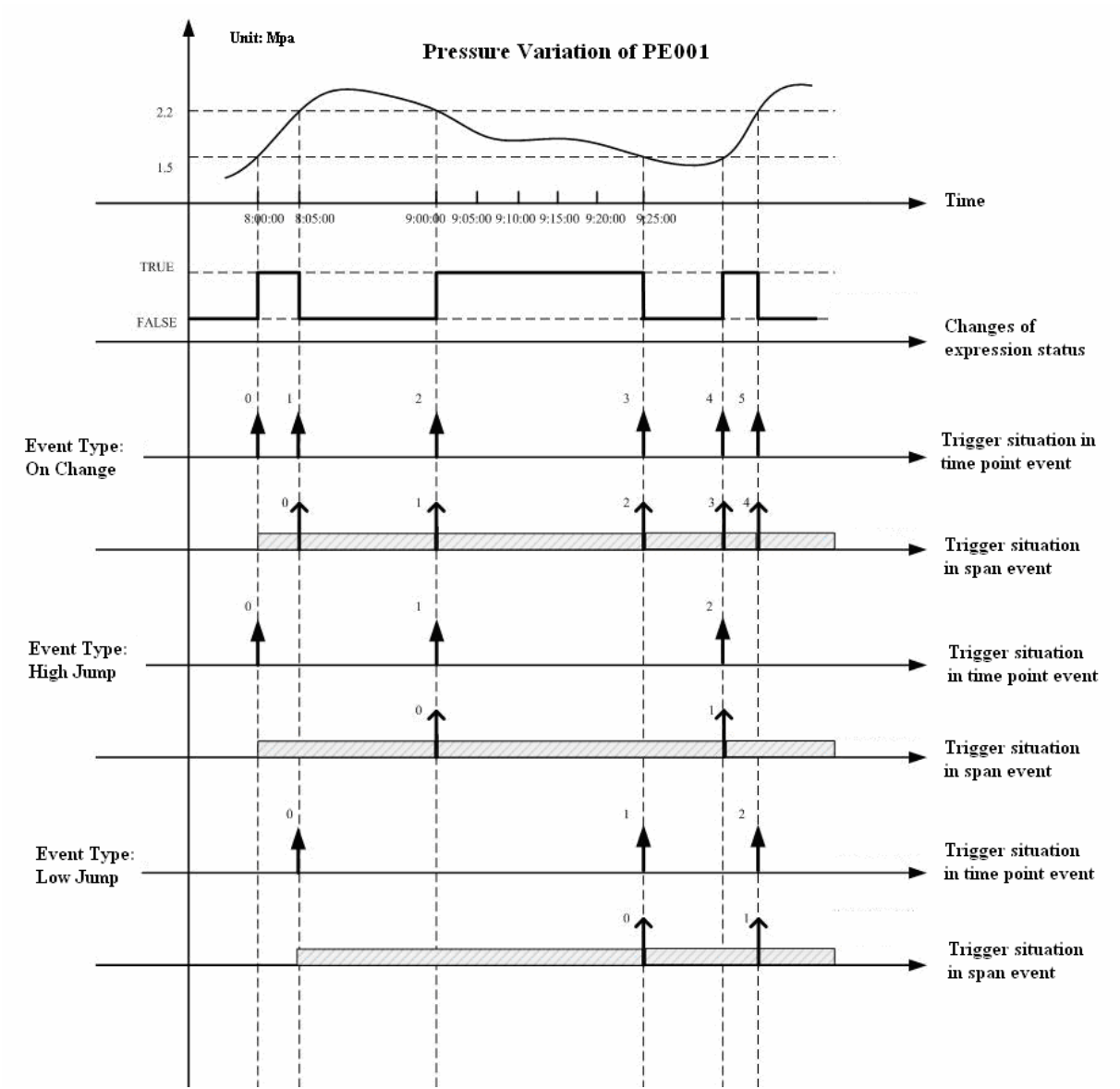
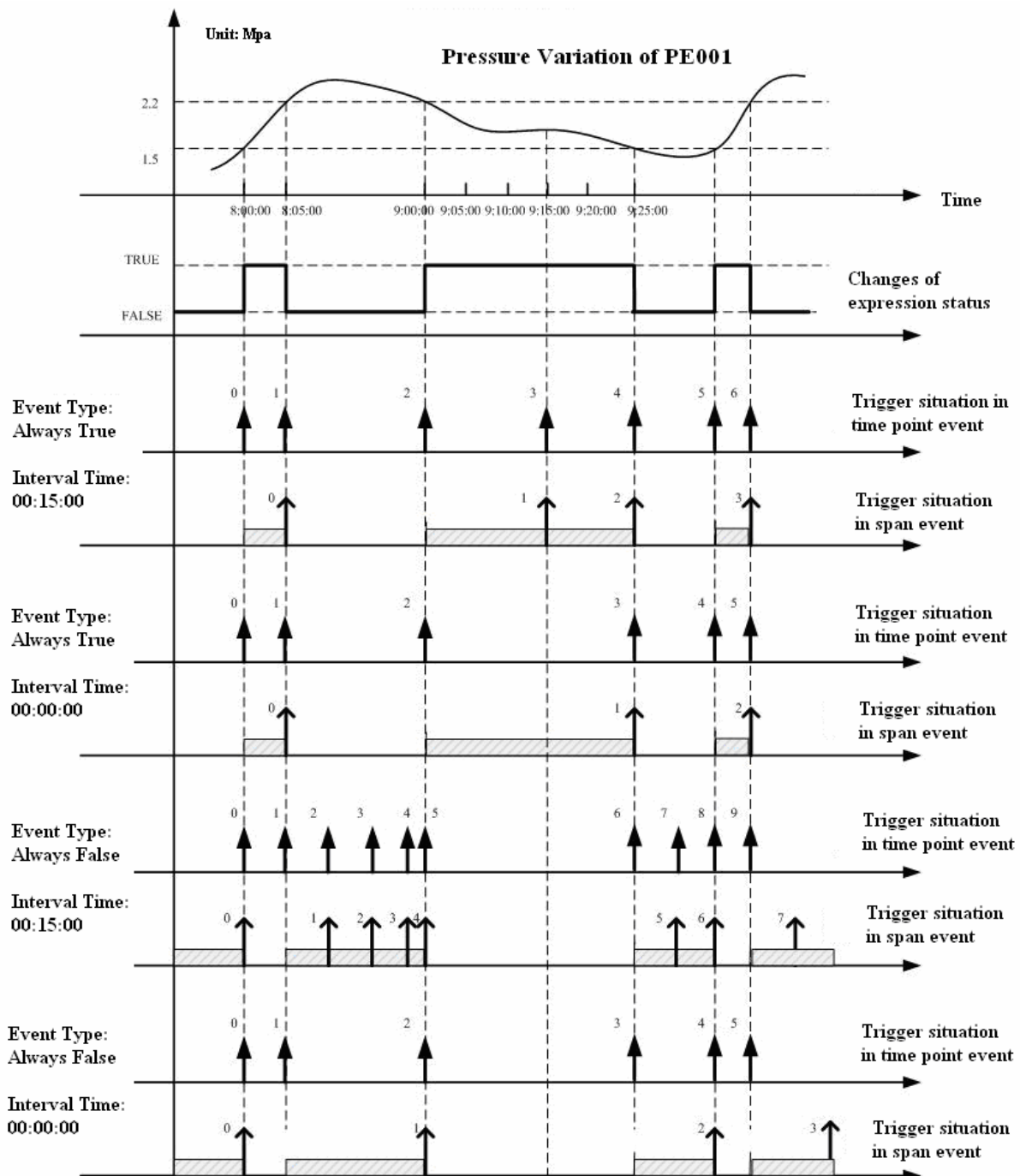


Figure 2-46 Event triggering figure 1






**Figure 2-47 Event triggering figure 2**

The compile method of the expression will be introduced by a concrete example below.

### Example 2

Compile the event expression "It is 8 o'clock".

1. Input "Name" and "Description" in the event information box as shown in Figure 2-44.
2. Select "Expression", and then select "High Jump" in "Event Type"
3. Click the icon  on the right of "Data Source" to enter the interface "Expression"

Editor" and input the expression `GETCURTIME="08:00:00"`.

- Click the button "Syntax Check", and after the prompt "Syntax correct", click the button "OK" to save the compiled content. Click the button "OK" again to exit the expression editor; Click the button "Cancel" also to exit the expression editor but the compiled content is not saved.

### Delete Event

Select the event to be deleted in the list, click the button "Delete" and pop up the confirm dialog box. Click "Yes" to delete the event. After deletion, all the statistic items which quote the event are invalid. Recompiling is suggested. The event serial number is generated by software automatically and indicates the only event. It doesn't change with the amount of events.

### Modify event

Select the event to be modified in the list, click the button "Modify" and pop up the "View Information" dialog box where users can modify the event.

### 2.5.2 Fill

Select the table to be filled, click the menu **File/Fill** or use the shortcut key [Ctrl+Q] and pop up the dialog box "Fill", as shown as follows. If the statistic item format is known, users can input manually, or fill in the cell by the filling function.

**Figure 2-48 Cell Filling**

Concrete setting methods of all items in the filling dialog box are as follows:


Statistical Item: Select the required statistic item in the pull-down box, as shown in Figure 2-49. Each statistical item has its own expression manner. Generally, it means some statistical items of "Event [1]" (time point event) in the interval of "Event [2]" (span event). Statistical items and their parameters list are as shown in Table 2-3.

**Figure 2-49 Filling (Statistical Item)**

**Table 2-3 Statistical Terms and Their Parameters List**

Statistic Item			Format(parameter, Tag is the tag name)
Instant value	Instant Value	INS	{INS, Tag, Event[1]][0]
Instant Time	Instant Time	INT	{INT, Event[1]} [0]
	Over range occurrence time, Over range end time.		
Average Value	Average Value	AVG	{AVG, Tag, Event[1]} [0]
	Average value of data per second between last trigger and one second before this trigger.		
Integral Value	Integral Value	INV	{INV, Tag, Event[1], K} [0]
	Accumulation of data per second between last trigger and one second before this trigger, then multiplied by K.		
Differential	Differential Value	DIF	{DIF, Tag, Event[1]} [0]
	Data of one second before this trigger minus data of last trigger.		

Statistic Item			Format(parameter, Tag is the tag name)
Maximum	Maximum	MAX	{MAX, Tag, Event[1]} [0]
	Maximum of data per second between last trigger and one second before this trigger.		
Minimum	Minimum	MIN	{MIN, Tag, Event[1]} [0]
	Minimum of data per second between last trigger and one second before this trigger.		
Max Value Occur Time	Max Value Occurrence Time	MAT	{MAT, Tag, Event[1]} [0]
	Maximum value occurrence time per second between the last trigger and one second before this trigger		
Min Value Occur Time	Min Value Occur Time	MIT	{MIT, Tag, Event[1]} [0]
	Minimum value occurrence time per second between the last trigger and one second before this trigger		
Duration For Event	Duration For Event	DFE	{DFE, Event[1], Event[2]} [0]
	Over range duration, digital 0 status time (second) digital 1 status time (second) The over range duration of Event [2] in the span between two triggers of statistical Event [1] Event [2] is always true event or always false event. The triggering time interval must be set properly. The time interval is unit of the duration.		
Times of Event	Times of Event	TOE	{TOE, Event[1], Event[2]} [0]
	Disqualified points, over range times, digital jump times, and digital reset times of Event [2] in the span between two triggers of statistical event Event [1].		
Percent of Event	Percent of Event	POE	{POE, Event[1], Event[2]} [0]
	Percent of event is got by times of event divided by the span between two triggers of Event [1] .		

Tag Name: Click the button  beside the tag name and pop up the dialog box **Tag Selector** as shown in Figure 2-50. Select a tag or enter a tag name. Click **OK** and the tag will be added into the editing box beside the tag name in Figure 2-48.

Tag Selector

Filter

Operation Domain: OA00120 - MainSteamCc

Control Domain: All Visible Control Domain

Control Station: All Visible Control Station

Tag Group: All Tag Group

System Type: ECS-700

Tag Type: All Types

FunctionBlock Type: All Types

Tag Name Filter:

Tag Desc Filter:

☒ Trend Tag

☒ Non-trend Tag

☐ Case Sensitive

Search

>>

Clear Filter Condition

Soft Keyboard

Tag Name	Tag Description	Tag Type
ARR_REAL	Standby	Custom Analog
ARR_UINT	Standby	Custom Integer
AI00020000	Standby	Analog Input
AI00020001	Standby	Analog Input
AI00020002	Standby	Analog Input
AI00020003	Standby	Analog Input
AI00020004	Standby	Analog Input
AI00020005	Standby	Analog Input
AI00020006	Standby	Analog Input
AI00020007	Standby	Analog Input
AI00020015	Standby	Analog Input
AI00020016	Standby	Analog Input
AI00020017	Standby	Analog Input
AI00020018	Standby	Analog Input
AI00020019	Standby	Analog Input
AI00020020	Standby	Analog Input

Field

Field Description

Data Ty

| DESC | Tag Description | STRING |
| VALUE | Real-time Value | REAL |

Tag Number: 320

Reload

OK

Cancel

Figure 2-50 Tag selector

- Statistic event: data recorded trigger event
- Counted event: counted expression events (When the statistic item is duration for event, times of event or percent of event, this item is available).
- Start NO.: The first index of the statistic item, 0 by default.
- Interval NO.: The index interval of the statistic item, 1 by default.
- The part shown in Figure 2-51 is used to set the format of the filling cell. When the format of the statistic item is numerical value, the interface is available. When the format of the statistic item is time, times of event or percent of event and so on, the interface is not available.

☒ Floating

☐ Digital

☐ Integer

Digits:

2

☒ Settings

Scale Coef.:

1

Figure 2-51 Filling setting (cell format)

- Digital: The item is optional. If not set, current default decimal digits will be used. The default decimal digit is 2. (Decimal digits need not be set in time function and statistical function. The default format of time is "yy-mm-dd hh:mm:ss".)

- Scale coef: When the statistic item is integral value, Scale coef can be set.
- When the type is digital or integer, decimal digits is not available. It is similar to set decimal digits as 0 when the type is floating point.

**Notes for filling setting are as follows:**

1. Daily event serial number is calculated from the start time. For example, when the start time is 8:00:00 and the interval time is 0:05:00, the event is triggered for the first time at 8:00:00 and the serial number is "[0]". The event is triggered for the second time at 8:05:00. and the serial number is "[1]". If the event triggered at 20:00:00 is needed, the serial number would be [144]. Weekly event and monthly event are the same with daily event.



---

**Tips:**

- "{INS, tag name, Event[1]}[0]" is a data point. Serial number [0] is the first recorded data point (According to settings in statistic event, it is the data recorded when the event is triggered for the first time. If the Report Server is started after the time that the event is triggered for the first time, then the cell of serial number [0] will be empty )on current day (statistic event is daily event). In the example above, if only the data at 08:00:00, 08:15:00, 08:30:00 is needed to record, the serial numbers be filled will be [0], [3] and [6]. If the interval time is modified from 0:05:00 to 0:15:00, the serial numbers be filled will be [0], [1] and [2].
  - If 10 data points are needed, user can select 10 cells first, then click the menu [File/Fill] , according to "Start NO." and " Interval NO." in the dialog box of " Fill", Report Software will fill in cells with serial number in sequence automatically.
  - It is not available to fill a cell and then drag to auto-fill in Normal Mode.
- 

2. If time interval of every day event is 23:59:59 (or 0:00:00, and it is taken as a special situation), it is triggered once everyday.
3. Users can adjust the filling serial number to output data of last day at 8 o'clock every morning as shown as follows.

	A
1	{INS, TAG NAME, Event[1]}[8]
2	{INS, TAG NAME, Event[1]}[9]
3	{INS, TAG NAME, Event[1]}[10]
4	{INS, TAG NAME, Event[1]}[11]
5	{INS, TAG NAME, Event[1]}[12]
6	{INS, TAG NAME, Event[1]}[13]
7	{INS, TAG NAME, Event[1]}[15]
8	{INS, TAG NAME, Event[1]}[16]
9	{INS, TAG NAME, Event[1]}[17]
10	{INS, TAG NAME, Event[1]}[18]
11	{INS, TAG NAME, Event[1]}[19]
12	{INS, TAG NAME, Event[1]}[20]
13	{INS, TAG NAME, Event[1]}[21]
14	{INS, TAG NAME, Event[1]}[22]
15	{INS, TAG NAME, Event[1]}[23]
16	{INS, TAG NAME, Event[1]}[0]
17	{INS, TAG NAME, Event[1]}[1]
18	{INS, TAG NAME, Event[1]}[2]
19	{INS, TAG NAME, Event[1]}[3]
20	{INS, TAG NAME, Event[1]}[4]
21	{INS, TAG NAME, Event[1]}[5]
22	{INS, TAG NAME, Event[1]}[6]
23	{INS, TAG NAME, Event[1]}[7]

**Figure 2-52 Adjust Filling Serial Number (example)**

### 2.5.3 Output Settings

Click the menu **File/Output Settings**, pop up the interface "Output Settings". "Print" and "Output Event" should be set in each report. The list shown in Figure 2-53 lists all the report names and their parameters.

- **Print:** Ticking off in the check box indicates printing the report when the report is configured. The item "Report Print" should also be selected. (Please refer to the corresponding part of "Real-time supervision software manual" for concrete settings).
- **Output Event:** Click the column "Output Event" and select the output event in the pull-down event list. When the event is triggered, a report will be output. If the item is not set, the output event in the output setting is "NULL". "Cannot find the output event of the report" will be prompted in the interface "Report Compile Information" during compiling.

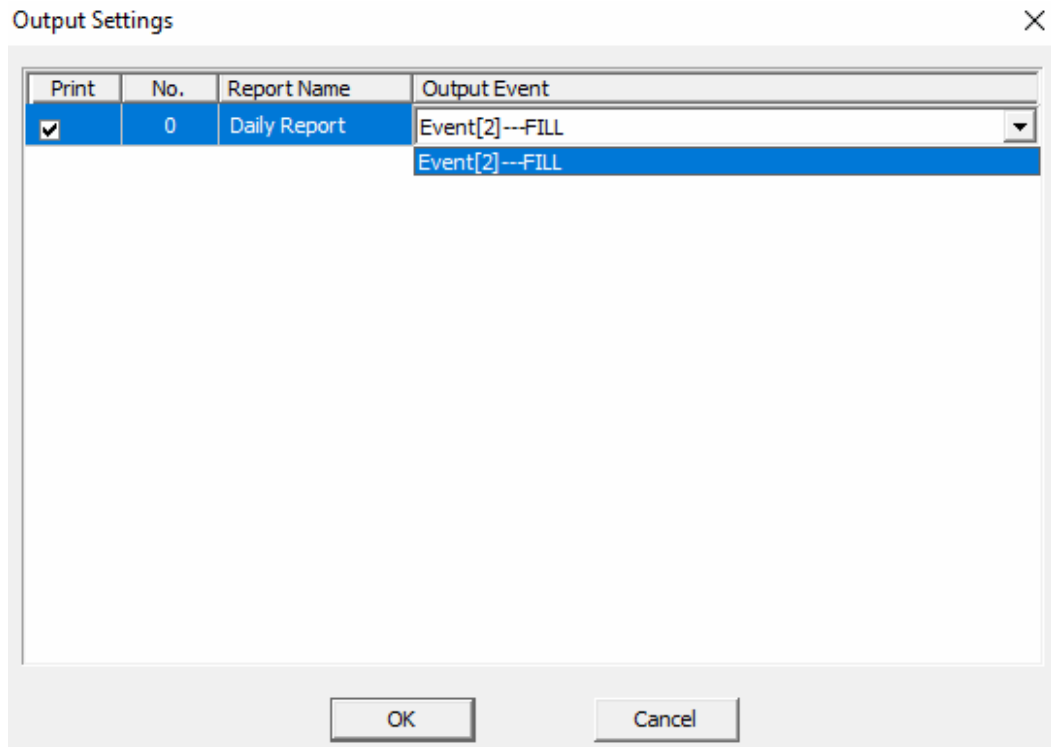


Figure 2-53 Output Setting Interface



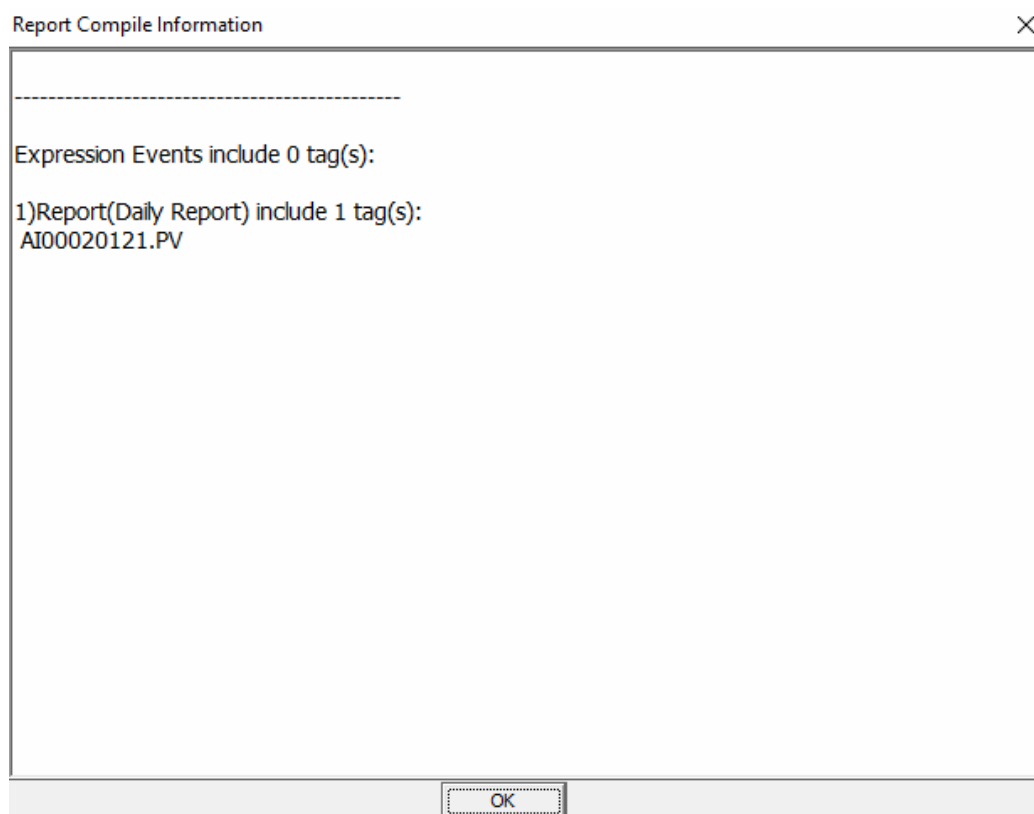
**Tip:**

When the report output event is set, users should avoid configuring more than one reports simultaneously in short time (like 10 seconds). Stagger the configuration time of reports by proper configurations.

## 2.5.4 Save and Compile

Save and Compile is used to save the current report project and compile it to a report configuration file (.rpc). Click the menu command **File/Save and Compile**, pop up the confirm dialog box "Do you want to compile the report?". Click "Yes" to compile the report and pop up the window "Report Compile Information" with the report compile result, as shown in Figure 2-54. Otherwise, the report will not be saved and compiled. If the filling tag doesn't exist, the system will prompt "The tag is not configured" in the report compile information.





**Figure 2-54 Report Compile Information**

**Table 2-4 Report compile error information**

Error causes	Solutions
Event list is empty.	Add the event definition
Report is empty.(No report)	Add reports or filling content
Expression compile error	Modify the expression and perform syntax check after expression compile
Statistic item failed to referent event	Continue compiling after the prompt
Can't find the report output event or the reference event error	Reset "Output setting"
Report name has been modified	Reset "Output setting"
Save error after compiling the report	Check the project path and so on
Tag name is not configured	Select the defined tag or add the undefined tag to the configuration.

### 2.5.5 Alias Settings

Alias Settings is used to query the report by alias when a report is configured. Click the menu **File/Alias Settings**, pop up an alias setting dialog box as shown as follows. The alias of the cell can be set in the table in this dialog box. Users can add, modify and delete alias.

- Report Name: All the generated reports are listed in the pull-down list. Select the report where alias need to be set.
- Row: Input the row number of the cell where alias need to be set in the input box below "Row" (from 1 to 1000).
- Col: Input the column number of the cell where alias need to be set in the input box below "Column" (from A to CV).
- Alias: Input the alias of the cell in the input box below "Alias".
- Add: Click the button "Add" to add the alias to the alias list after row; column and alias have been set, as shown as follows. Only one alias can be added to one report.

Alias Settings

Report Name: Daily Report (dropdown) Row: 2 Col: c Alias: watch

Row	Col	Alias
2	C	Watch
2	A	ClassNumber

Buttons: Add, Edit, Delete, OK, Cancel, Apply

**Figure 2-56 Report alias configuration after aliases have been added.**



**Perform alias setting to five cells in single report at most. Each alias can include twenty characters at most and can't include symbols like |, = and space. And aliases can't be empty.**

- **Edit:** Select the alias to be edited in the alias list. The row number, column number and alias of the selected alias will be displayed in the input box below "Row", "Column" and "Alias". Click the button "Modify" after the alias of the cell has been modified. The modified alias will be displayed in the alias list.
- **Delete:** Select the alias to be deleted. Click the button "Delete", pop up the confirm dialog box. The alias will be deleted after confirming
- **Apply:** Click the button "Apply" after configuration to save the alias configuration and users can configure aliases in the dialog box as shown in Figure 2-56.
- **Cancel:** Click the button "Cancel" after configuration. The alias configuration will not be saved and exit the alias configuration dialog box.
- **OK:** Click the button "OK" after configuration to save the alias configuration and exit the alias configuration dialog box.

If the cell where alias is to set needs to be edited manually when the report is configured (for example, users need to input the names of the watch manually), users can select the cell in the right-click menu in the report edit and select "Unlock".

In the status of supervision, users can query a report by the alias in the condition filter dialog box in the report browse interface. Please refer to 4.4.1 for details.

## 2.6 Normal report Function

### 2.6.1 Report Event Function

In the event definition, report event function is used to set the conditions of report configuration and printing. Once the configuration information is satisfied, the system triggers and prints the report. The result of the expression event must be Boolean.

In the event definition, an expression includes operator, operand and function, as shown as follows.

**Table 2-5 Expression types**

Type	Definition
Operator	
NOT, AND, OR, XOR	Logic: not, and, or ,xor
+, -, *, /, MOD, POW	Addition, subtract, multiplication, division, module, power
<, <=, >, >=, =, <>	Less than, less than and equal to, more than, more than and equal to, equal to , not equal to
Operand	
Digital Constant	e.g.: as 12.5
String Constant	e.g.: "abc"
Logic Constant	Includes TRUE and FALSE
Tag	expressed as tag("tag001")
Function	
SIN	Sine; Input value is FLOAT, and output value is FLOAT; For example, $\text{SIN}(\pi/3)$

Type	Definition
COS	Cosine; Input value is FLOAT, and output value is FLOAT; For example, $\text{COS}(\pi/3)$
TAN	Tangent; Input value is FLOAT, and output value is FLOAT; For example, $\text{TAN}(\pi/3)$
LN	Natural logarithm; Input value is FLOAT, and output value is FLOAT; For example, $\text{LN}(\pi/3)$
ASIN	Anti-sine; Input value is FLOAT, and output value is FLOAT; For example, $\text{ASIN}(\pi/3)$
ACOS	Anti-cosine; Input value is FLOAT, and output value is FLOAT; For example, $\text{ACOS}(\pi/3)$
ATAN	Anti-tangent; Input value is FLOAT, and output value is FLOAT; For example, $\text{ATAN}(\pi/3)$
LOG	Common logarithm; Input value is FLOAT, and output value is FLOAT; For example, $\text{LOG}(2)$
INT	Integer(wipe off the decimal fraction); Input value is FLOAT, and output value is INTEGER; For example, $\text{INT}(10.5)$
ABS	Absolute value; Input value is INTEGER and output value is INTEGER; For example, $\text{ABS}(-50)$
FABS	Absolute value of floating point numbers; Input value is FLOAT, and output value is FLOAT; For example, $\text{FABS}(-50)$
SQRT	Square root; Input value is FLOAT and output value is FLOAT; For example, $\text{SQRT}(50)$
EXP	Exponent of e; Input value is FLOAT and output value is FLOAT; e.g.: $\text{EXP}(50)$
POW	Power; Two input values are FLOAT and output value is FLOAT; For example, $2 \text{ POW } 3$
ISJMPH	Up jumping; Input value is BOOL (generally tag), and output value is BOOL; For example, $\text{ISJMPH}(\text{TAG}("A"))$
ISJMPL	Down jumping; Input value is BOOL (generally tag), and output value is BOOL; For example, $\text{ISJMPL}(\text{TAG}("A"))$
GETCURTIME	Current time; No input and output value is string "12:20:20"; For example, GETCURTIME
GETCURDATE	Current date; No input and output value is string "2000-04-01"; For example, GETCURDATE
GETCURYEAR	Current year; No input and output value is INTEGER; For example, GETCURYEAR
GETCURMONTH	Current month; No input and output value is INTEGER; For example, GETCURMONTH
GETCURDAY	Current day (every month); No input and output value is INTEGER; For example, GETCURDAY
GETCURDAYOFWEEK	Current day of week; No input and output value is INTEGER; For example, GETCURDAYOFWEEK
GETCURHOUR	Current hour; No input and output value is INTEGER; For example, GETCURHOUR
GETCURMINUTE	Current minute; No input and output value is INTEGER; For example, GETCURMINUTE
GETCURSECOND	Current second; No input and output value is INTEGER; For example, GETCURSECOND

**Tip:**

The input value unit of trigonometric function is radian.

## Operator priority

The priority of operators from high to low: bracket, function, NOT, power (POW), multiplication, division, MOD, +, -, <, <=, >, >=, =, <>, AND, XOR, OR.

## Examples of expressions:

1. abs: `abs(TAG("integer"))=2`: when the absolute value of integer tag is two.
2. cos: `cos(TAG("float"))>0.2 and cos(TAG("float"))<0.8`: when the cosine value of floating point number tag is between 0.2 and 0.8.
3. exp: `exp(TAG("floata"))mod 5>2 and exp(TAG("floatb"))=2`, Tag floata and tag floatb are floating point number: when the arithmetical compliment of `exp(TAG("floata"))` divided by five is more than two and `exp(TAG("floatb"))` is two.
4. fabs: `fabs(TAG("floata")) + fabs(TAG("floatb"))=25`: when the absolute value of floata added by the absolute value of floatb is twenty five.
5. getcurdate: `getcurdate="2007-08-17"`: when time is August 17<sup>th</sup>, 2007.
6. getcurdayofweek: `getcurdayofweek=2` : when it is Monday.
7. getcurhour: `getcurhour mod 2=0` : when the hour is integer multiple of 2 (0, 2, 4,...,22).
8. getcurmin: `getcurmin =28` : when the minute is 28; `getcurmin=5 and getcurhour=2` : when it is 2:05.
9. getcursec: `getcursec =20 or getcursec = 40` when it is 20 or 40 seconds.
10. getcurtime: `getcurtime= "10:30:00"`: when it is 10:30:00.
11. isjmph: `isjmph (TAG("kaiguanliang"))`, "digital" is the name of a digital tag: When the digital signal "kaiguanliang" jumps up.
12. isjmpl: `isjmpl (TAG("kaiguanliang"))`: When the digital signal "kaiguanliang" jumps down.
13. ln: `ln(TAG("float"))>2` : when the natural logarithm of "float" is more than 2.
14. log: `log(TAG("float"))>2` : when the common algorithm of "float" is more than two
15. pow: `TAG("float1") pow TAG("float2")>5`: when ("float1") pow ("float2") is more than 5.
16. sin: `sin(TAG("float"))<=2` : when the sine of "float" is less than or equal to 2.
17. sqrt: `sqrt(TAG("float"))<>2` : when the square root of "float" isn't equal to 2.
18. tan: `tan(TAG("float"))>=2`: when the tangent of "float" is more than or equal to 2.

## Data type of event definition:

- String: A string expressed between "" includes any character, number, symbol and so on, for example, "asfDFFGdS9790#%^u&(\$\$\$&#!?>90WE)".
- Tag: It is expressed by TAG ("tag name"). For example, TAG ("adv-9-0").
- Number: For example, 1234.5678.

- Time: For example, "8:00:00". Time value can't be 24 o'clock (or more than 24 o'clock), 60 minute (or more than 60 minute), 60 second (or more than 60 second) or combination of them.
- Date: It is expressed by numbers from 1 to 31. For example, 1 means the first day of each month.
- Weekday or weekend: It is expressed by numbers from 1 to 7. 1 (Sunday), 2 (Monday), 3 (Tuesday), 4 (Wednesday), 5 (Thursday), 6 (Friday), 7 (Saturday). For example, GETCURDAYOFWEEK = 3 means that current day is Tuesday.

## 2.6.2 Report Table Function

Normal report includes functions of tag operation, table operation and statistical function: display the operation result of any tag at any time in a cell; call and calculate values of other cells; Sum or average values of all cells in a selected region. The value can be displayed exactly in the cell after operation when the report is output.

The report software includes two statistical functions: SUM and AVE. They can sum or average values of the selected region. The instructions are shown as follows.

**Table 2-6 Report Statistical Function**

Function name	Expression	Instruction
SUM	SUM(R row number 1 C column number 1, R row number 2 C column number 2)	Sum the values in the rectangle region (between Row 1 Column 1 and Row 2 Column 2)
AVE	AVE(R row number 1 C column number 1, R row number 2 C column number 2)	Average the values in the rectangle region (between Row 1 Column 1 and Row 2 Column 2)

Expressions are defined in the form of ":= calculation formula". The calculation formula can include several strings, several tags (Note: The tag must be defined in the tag list before it is quoted.), several cells, several kinds of functions and operators.

Call other cells by Row number R and column number C. For example, if a cell want to call another cell (Row 15, column D), Input the row number and column number of the cell ":=R15C4" to call it. For the combined cell, input the row number and column number of the top left basic cell. For example, a combined cell includes basic cells row 9 column 3, row 9 column 4, row 10 column 3, row 10 column 4, just input ":=R9C3" to call the combined cell.

System will prompt when the operation (for example: shift right, shift up, etc.) changes the position of the expression and current operation will be canceled. If the expression needs to be shifted, delete the expression first and re-input it in the designated position.

If recursion is used in the process of calling cells, current operation will be canceled. For example, a cell (row 1 column A) calls another cell (row 5 column C) and ":=R5C3" is input. Meanwhile, the cell (row 5 column C) calls the cell (row 1 column A) and ":=R1C1" is input. The System will prompt "Recursion is found in the expression, please input again!" and current operation will be canceled.

The following operators and functions are used to call cells:

**Table 2-7 Operators and functions in the combination operation**

Serial number	Type	Function /operator	Number of operator in the function	Function instruction	Example of expression
1	Operator	+		Addition	:=r1c1+r1c2
2	Operator	-		Subtraction	:=r1c1-r1c2
3	Operator	*		Multiplication	:=r1c1*r1c2
4	Operator	/		Division	:=r1c1/r1c2
5	Operator	Mod		Residual	:=r1c1 mod r1c2
6	Function	Abs	1	Absolute value	:=Abs(r1c1)
7	Function	Fabs	1	Absolute value of float	:=Fabs(r1c1)
8	Function	Sqrt	1	Evolution	:=Sqrt(r2c1)
9	Function	Exp	1	Exponentiation of natural logarithm	:=Exp(r2c1)
10	Function	Pow	2	Exponentiation	:=Pow(r2c1,2)
11	Function	Ln	1	Natural logarithm	:=Ln(r2c1)
12	Function	Log	1	Logarithm	:=Log(r2c1)
13	Function	Sin	1	Sine	:=Ln(r2c1)
14	Function	Cos	1	Cosine	:=Sin(r2c1)
15	Function	Tan	1	Tangent	:=Tan(r2c1)
16	Function	Min	2	Minimum	:=Cos(r2c1)
17	Function	Max	2	Maximum	:=Min(r1c1,r1c2)

**Tips:**

- In the table operation, only addition operation supports string and other operations only support integer or float.
- If the type of the quoted cell is not in accordance with the table function, display #VALUE! (e.g.::=r1c1+1, r1c1 is a string).
- If ":=r2c1+23d" is input in the table, the table function will display "Error 0: With no matching operator before D (in 7)". 7 indicates "r2c1+23d" error from the (7+1)th character.

## 2.7 Report Configuration Example


Create a report file according to the following requirements.

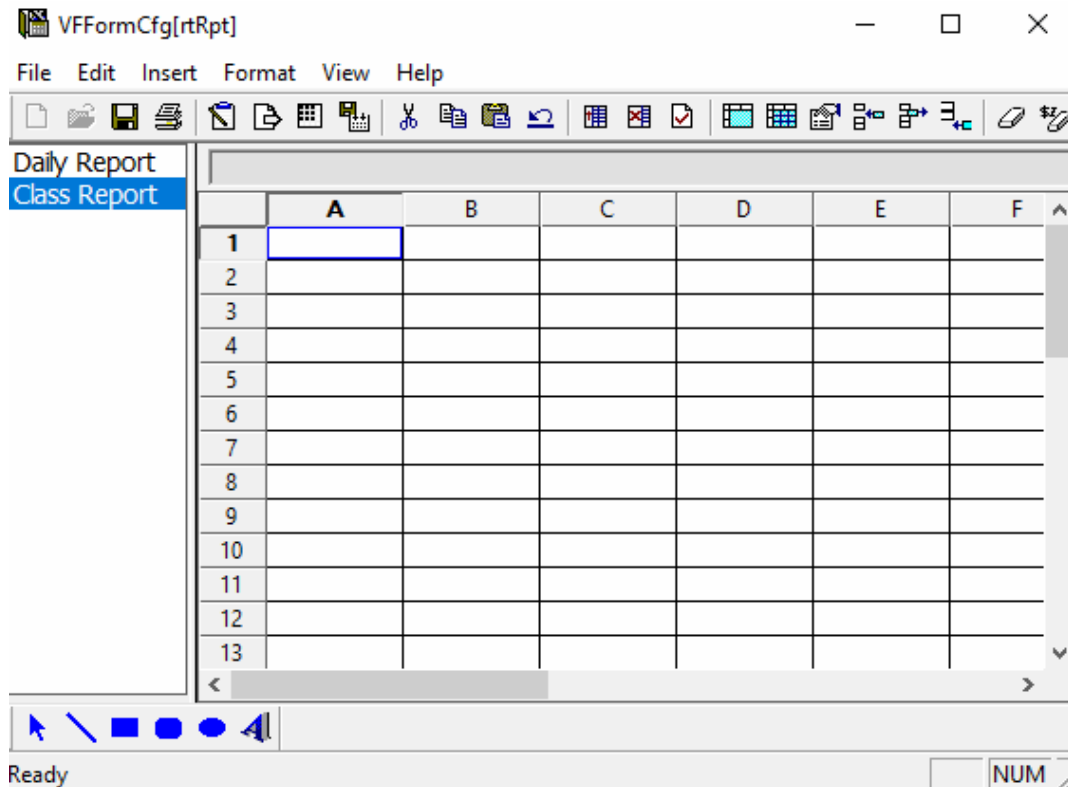
- Acquire and record data once every three hours.
- Configure and output a report every eight hours.

**Steps:**

1. Create the report file

Select the operation team of the report in the operation domain and click the Add button the system will add a report file automatically. Click the corresponding filename and input a new filename.

After inputting the report name (Class Report), click the button  on the right to a report editing interface, shown in Figure 2-57.



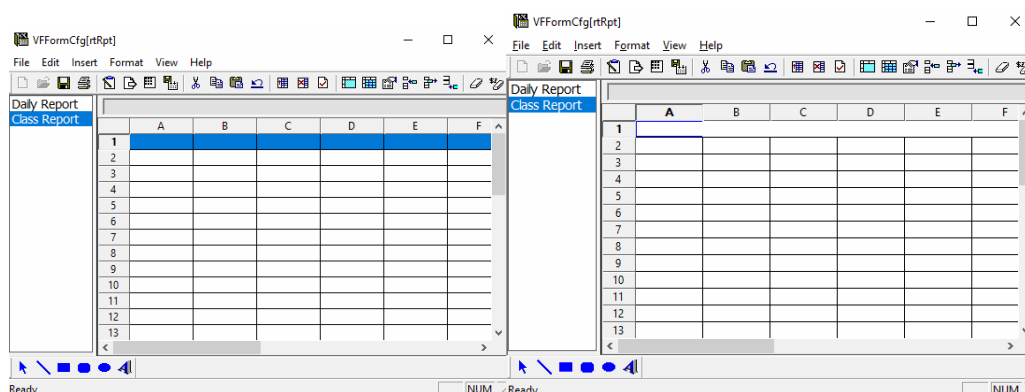
**Figure 2-57 Normal report Editing Window**

## 2. Edit report text

First, merge the cells in the first row. Select the cells from column A to L, i.e., click the cell (row 1 column A) and drag to the cell (row 1 column L). Click the merging cells icon



on the toolbar to complete the operation. The result is shown in Figure 2-58.



**Figure 2-58 Merge cells and its result**



Input the report name in the merged cell: XX device XX class report. The result is shown as follows.

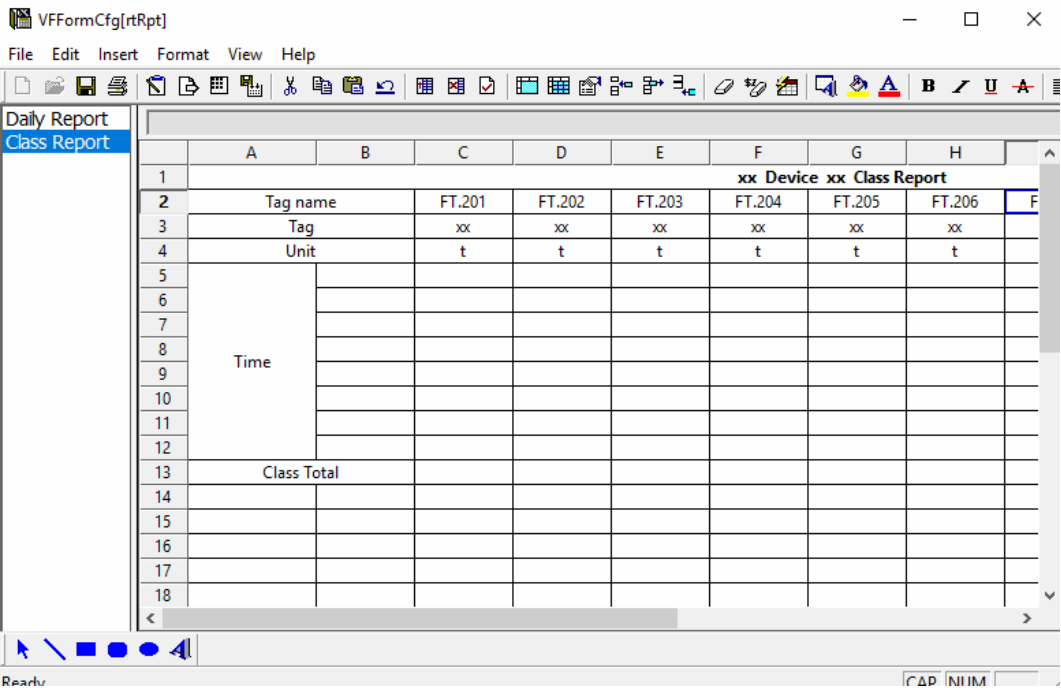


Figure 2-59 Day report editing interface 1

3. Report event definition

Two "time-based event" should be defined according to the analysis report requirement. Click **File/Event Definition** in the menu bar or use the shortcut key to enter an event setting interface .

Because the report is day report, "time-based event" can adopt every day trigger and different time interval.

- Acquisition event definition: Every day trigger and the start time is 00:00:00. Time interval is 03:00:00.
- Report output event definition: Every day trigger, output a report at 08:00:00 every day.

The result is shown as follows.

#### 4. Report filling setting

Users can fill the re

The second column of the report is the data acquisition time. Select the instantaneous time in the statistical item and the acquisition event in statistical event item. Click the menu **File/Fill** or use the shortcut key [Ctrl+Q] to open the "Fill" dialog box. Select the statistical item "Instant Time (INT)", and the statistical event is "Event [1]" acquisition event, as shown in Figure 2-61. The right figure is the effect after filling.

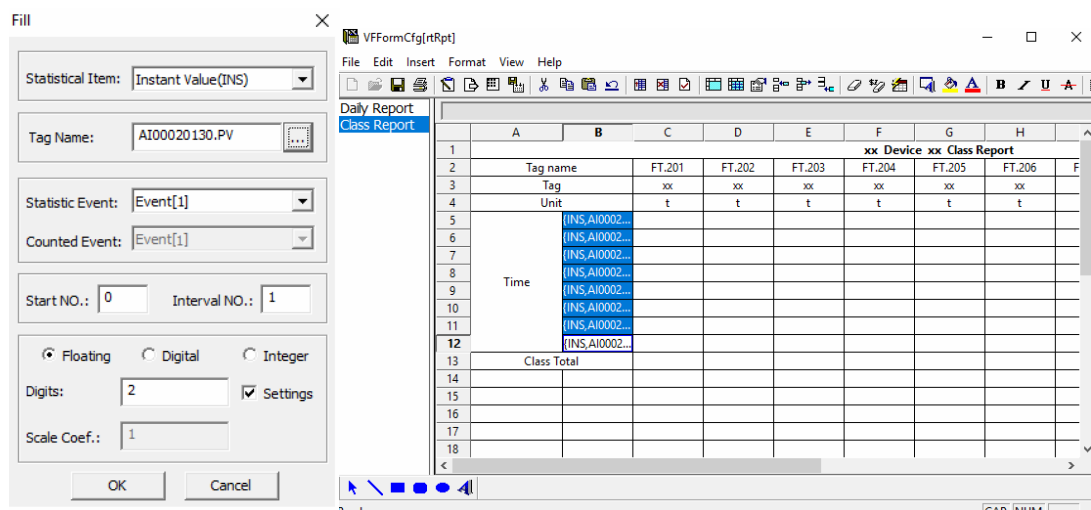



Figure 2-61 Report filling and filling effect 1

The filling of real time statistical data is similar to that of statistical time. However, tags should be added in the filling of real time statistical data. Open the "Fill" dialog box, select the statistic item "Instant Value (INS)" and users can input the tag name manually in the tag name input box or click the button  to select the tag in the tag selector. The effect after filling is shown in Figure 2-62.

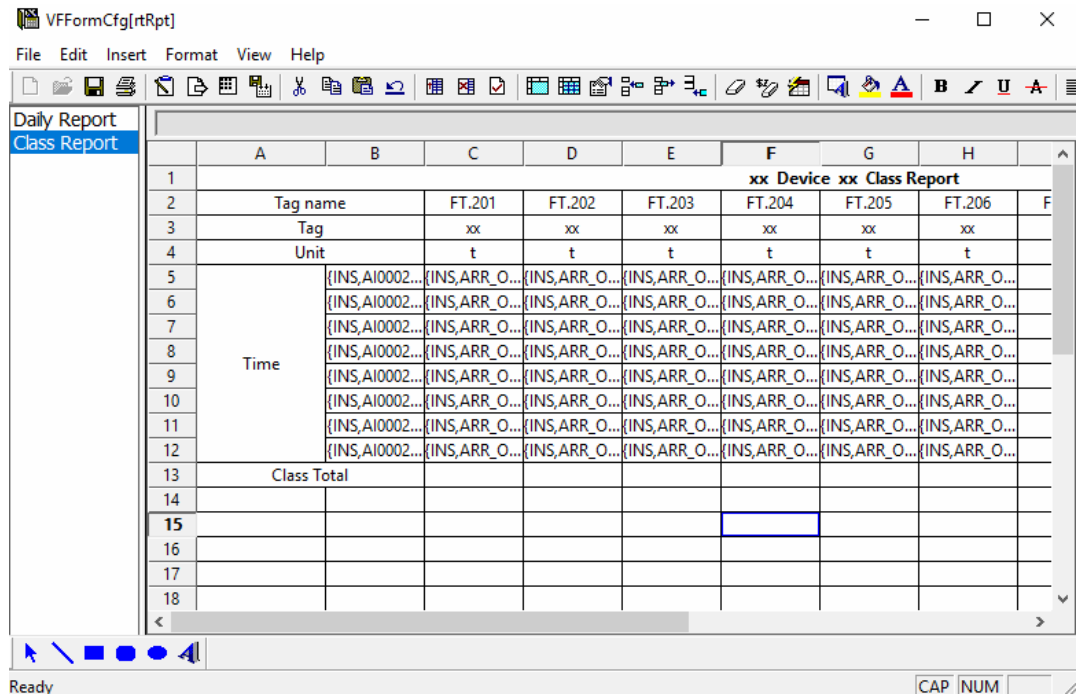
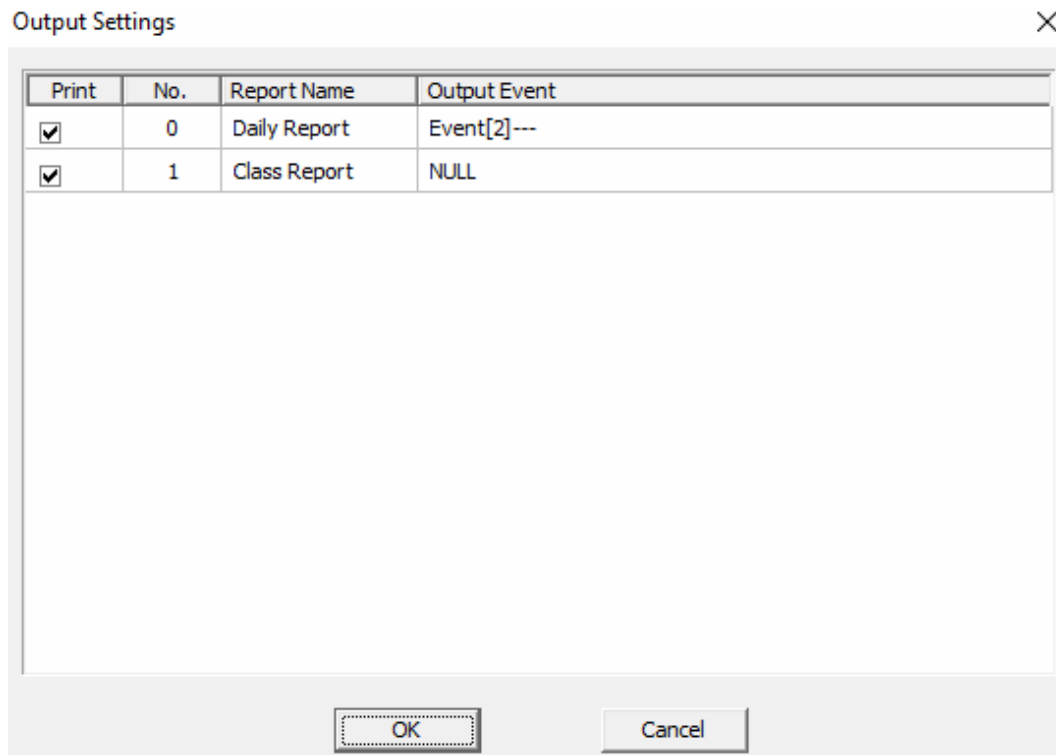


Figure 2-62 Report Filling Effect 2

5. Report output setting

After the report filling, the report can only be output at the defined time when "Output Settings" is set, click the menu **File/Output Settings**, pop up the **Output Settings** dialog box , as shown in Figure 2-63.



**Figure 2-63 Report output setting**

Select Event [2] as the output setting event of Class Report, i.e., the defined output setting. If the check box is ticked off in the printing column, print and output the report simultaneously.

6. Save and compile

After the report has been configured, select the menu command [File/Save and Compile] to perform the operation. And then save the configuration to the configuration server and publish it. Set "Start up Report Server" in the startup item to start up supervision. When the triggering time of events is reached, the statistics and output function will be triggered.

## Section 3 Excel Mode Report Configuration

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


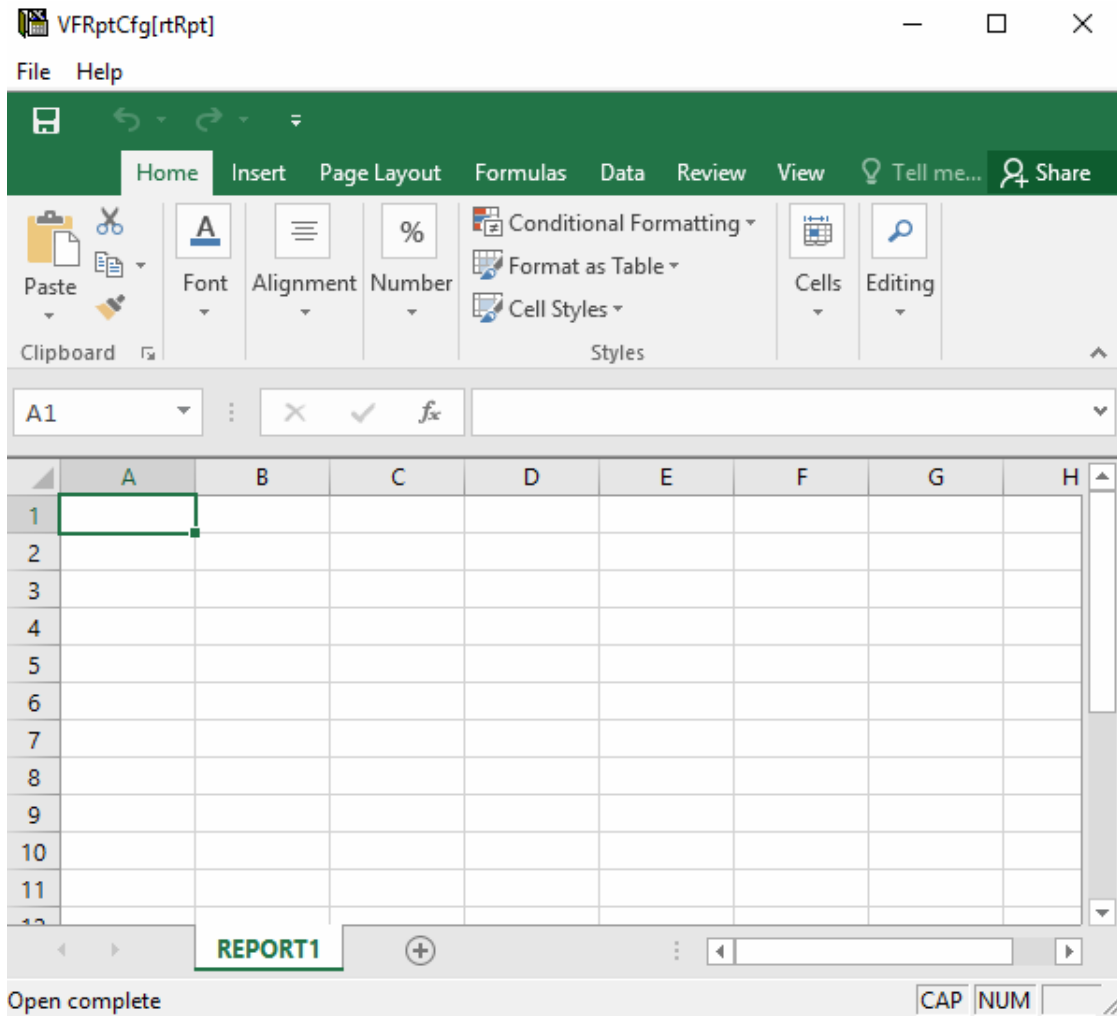
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### Tips:

- The report mode selection dialog box will pop up when reports are configured for the first time in the HMI builder. Users can select Normal Report or Excel Report. Once selected, it can't be changed. When the HMI builder is opened next time, users can only edit the report in this mode. So make sure the required mode before configuring.
  - All operation teams in an operation domain use the same report mode.
  - Before Excel reports are configured, Install Microsoft Office Excel (Microsoft Office Excel 2013 is recommended which is compatible with Microsoft Office Excel 2010, Microsoft Office Excel 2007, Microsoft Office Excel 2003 and Microsoft Office Excel 2000) and uninstall WPS.
  - Basic functions of Microsoft Office Excel can be implemented in the Excel report configuration environment, including cell operation, chart graphics, calculation, etc.
  - The suffix of Excel report in High-performanceHMI is .xls.
- 

### 3.1 Start up the Report Builder in Excel Mode

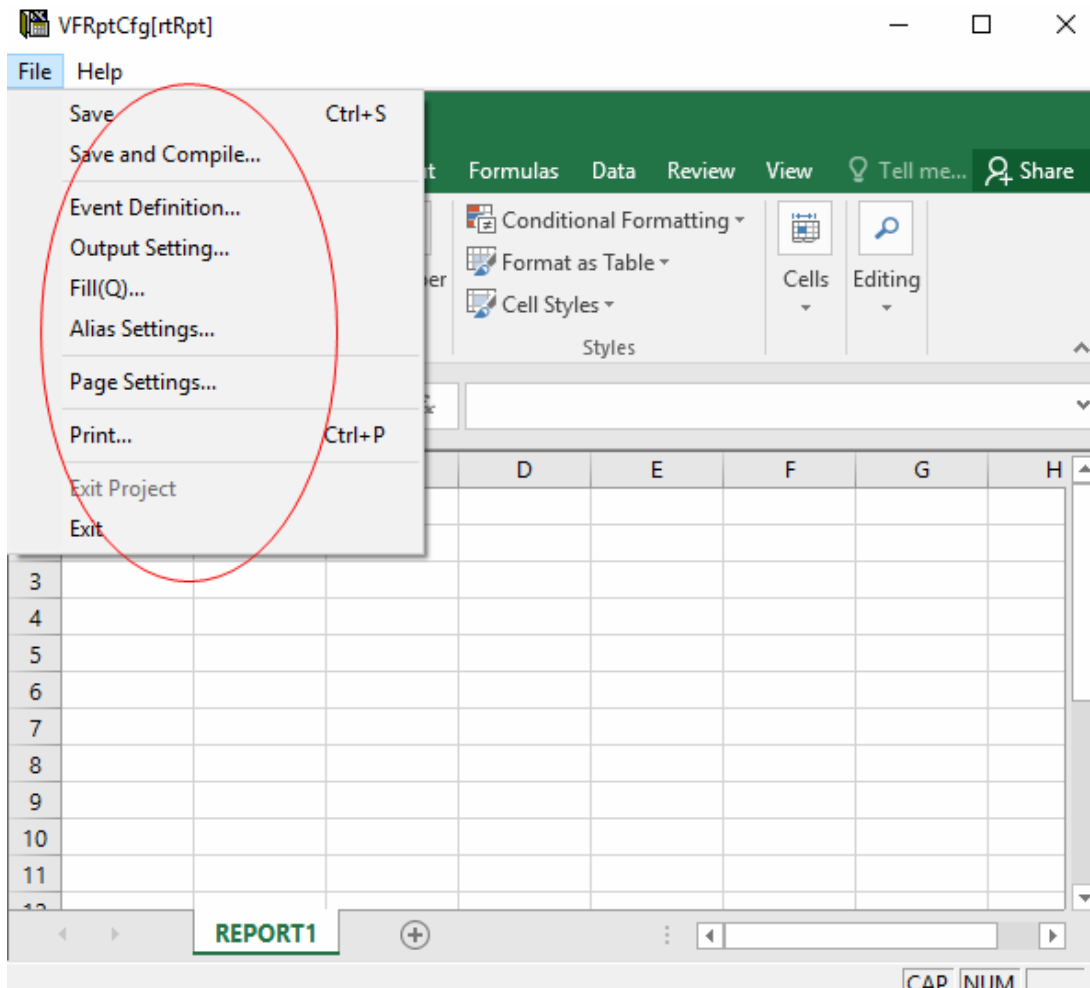
Select "Excel" in the report mode selection dialog box as shown in Figure 2-1, and click "OK" to add a report. Similar to the normal mode report configuration, users can click the button  to select the existing report. Or click the button "Edit" to enter a report editing interface, as shown as follows (Excel report editing interface is different according to the installed Microsoft Office Excel version . The report editing interface is shown as follows when Microsoft Office Excel 2003 is installed).



*Figure 3-1 Excel report editing interface*

## 3.2 Menu Command Overview

All the function commands except for the file menu and help menu shown below are the commands of Microsoft Office Excel.



**Figure 3-2 Specific menu commands of Excel report**

Please refer to 2.2, Table 2-1 for the menu command function shown above. And please refer to the help file of Microsoft Office Excel for other function commands.



**Attention:**

The encryption function of Microsoft Office Excel is not allowed in the Excel mode report editing interface.

### 3.3 Excel Report Format Configuration

Users can use function commands of Microsoft Office Excel to edit the format of a report. Please refer to the help file of Microsoft Office Excel for details.

## **3.4 Introduction to Main Functions of Excel Report Editor**

### **3.4.1 Event Definition**

Please refer to the Event definition part of normal mode report configuration in 2.5.1 for details.

### **3.4.2 Fill**

Please refer to the Fill part of normal mode report configuration in 2.5.2 for details.

### **3.4.3 Output Settings**

Please refer to the Output setting part of normal mode report configuration in 2.5.3 for details.

### **3.4.4 Save and Compile**

Please refer to the Save and Compile part of normal mode report configuration in 2.5.4 for details.

### **3.4.5 Alias Settings**

Please refer to the Alias setting part of normal mode report configuration in 0 for details.

## **3.5 Excel Report Function**

### **3.5.1 Report Event Function**

Please refer to the Report event function of normal mode report configuration in 2.6.1 for details.

### **3.5.2 Report Table Function**

Please refer to the help file of Microsoft Office Excel.

## **3.6 Report Configuration Example**

1. Please refer to "Microsoft Office Excel help file" for the report format settings.
2. Please refer to the report configuration example in 2.7 for event definition, filling and output setting, etc.



## Section 4 Report Browser

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Main functions of the report browser include report browsing and editing in the real-time/history bank and generating/generated report.



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**Attention:**

**Run the report server first before the report browse is started up. Otherwise, functions of the report browse are not available. Users can perform the startup setting of the report server before starting up real time supervision system: Select Start > OMC > System Global Settings, select "Monitoring" tab in the pop-up dialog box and select "Start Report Server".**

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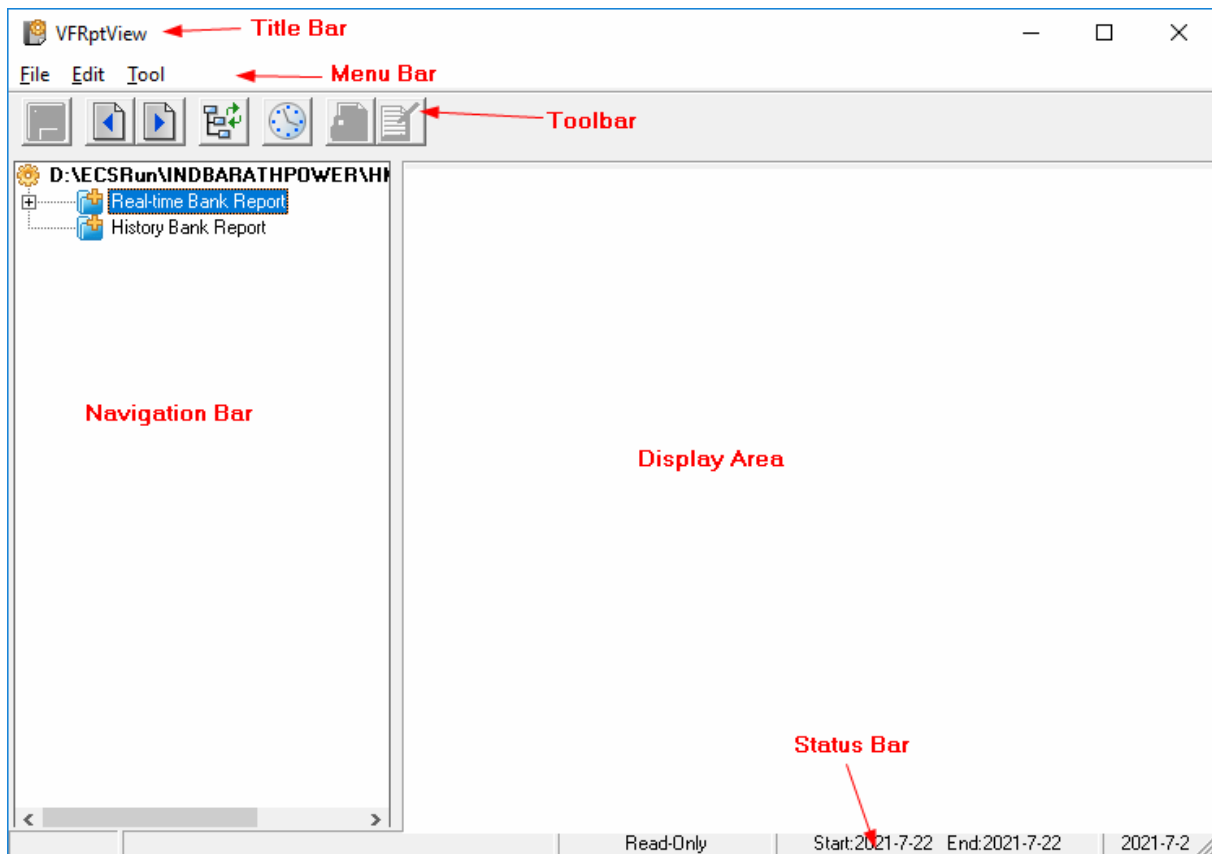
### 4.1 Report Browse Process



After the report configuration, click the report display button in the supervision header in the HMI builder and pop up the "VFRptView" interface. The report browser loads the current report project by default. If users have editing authority, users can edit it. Simultaneously, users can configure, create, browse and edit the history report.

### 4.2 Instruction to Interface

The main interface of a report browse includes six parts: title bar, menu bar, toolbar, navigation area, display area and status bar. The browse interface of normal report is shown in Figure 4-1. Excel report browser interface is the same with normal report browser interface except the display area.



**Figure 4-1 Main interface of report browse software (Excel report browse interface)**

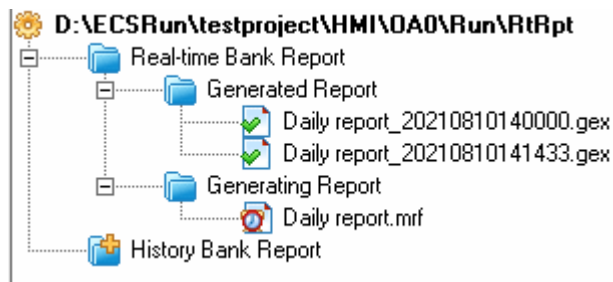
- Title Bar: The title bar displays the name of the report browse software: VFRptView.
- Menu Bar: The menu bar includes 3 menu items: File, Edit and Tool. Characters in the right bracket of each menu item indicate shortcut key manner. Press "ALT+Shortcut character" simultaneously to open the menu item and display the content of its submenu.

**File (F):** The file menu includes six submenus: Save File, Page Settings, Print Preview, Print, Close File and Exit.

**Edit (E):** The edit menu includes three submenus: Conditional Filtration, Protection and Refresh Tree.

**Tool (T):** The tool menu includes four submenus: History Report, Statistical Server, Print Server and Configuration.

- Toolbar: Display some commands in the menu item in the form of icons to make users operate easily.
- Navigation Area: Display all report files that can be browsed and edited in the current report project.



**Figure 4-2 Navigation area**

- Display Area: , Display the report page in the display area when it is double clicked in the navigation area

Normal report browser interface, the display area is shown in Figure 4-3.

	A	B	C	D	E	F	G
1		APT0101	BVC263				
2	2009-4-9 00:00:00	99.34	1.00				
3	2009-4-9 00:00:05	98.85	1.00				
4	2009-4-9 00:00:10	97.92	1.00				
5	2009-4-9 00:00:15	96.95	0.00				
6	2009-4-9 00:00:20	95.78	0.00				
7	2009-4-9 00:00:25	94.70	0.00				
8	2009-4-9 00:00:30	92.90	1.00				
9							
10							

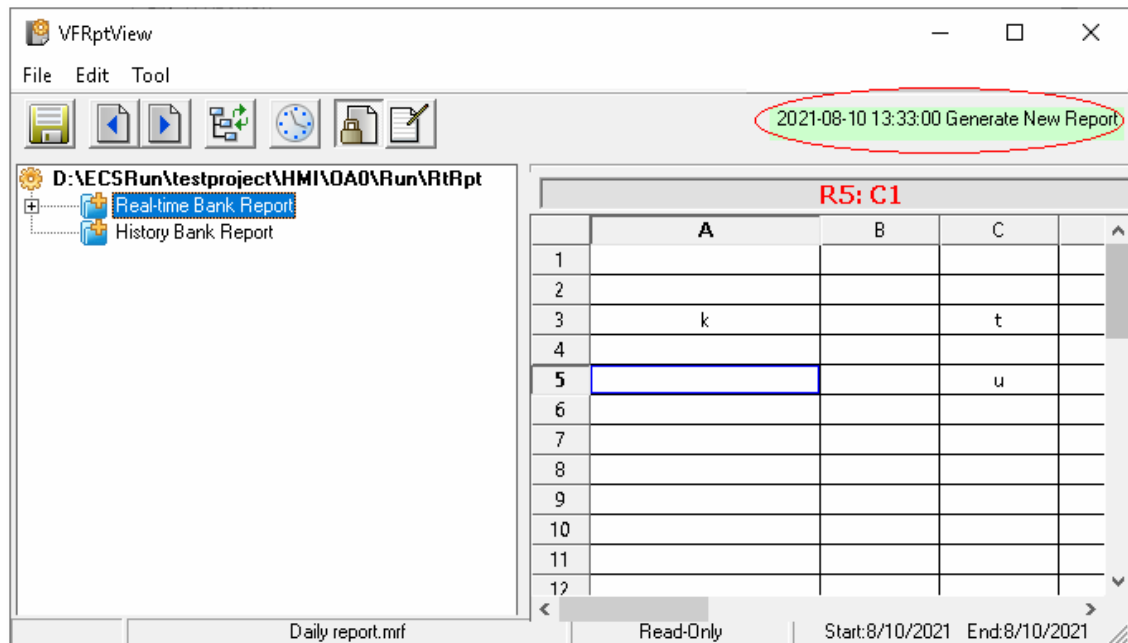
**Figure 4-3 Figure Display area of normal mode report**

In Excel report browser interface, the display area is shown in Figure 4-4.

	A	B	C	D
1	Team No:	1		
2	Supervisor:	Alex		
3				
4	Time:	Steam	Water	Plag
5	11:30:00	10.00	20.00	30.00
6	11:31:00	11.10	21.00	31.00
7	11:32:00	12.20	22.00	32.00
8	11:33:00	13.30	23.00	33.00
9	11:34:00	14.40	24.00	34.00
10	11:35:00	15.50	25.00	35.00
11	11:36:00	16.60	26.00	36.00
12	11:37:00	17.70	27.00	37.00
13	11:38:00	18.80	28.00	38.00
14	11:39:00	19.90	29.00	39.00
15	11:40:00	21.00	30.00	40.00
16	11:41:00	22.10	31.00	41.00
17	11:42:00	23.20	32.00	42.00
18				

**Figure 4-4 Excel mode report display area**

In the process of browsing or editing a report in the display area, the report in the display area will be saved and exit automatically if the report server configures a real time report . System will prompt the configured report as shown as follows in the top right interface (If double clicked, the prompt will disappear). When the report is in the print preview status, the report will be saved automatically and exit if a real time report is configured.










**Figure 4-5 Prompts when a new report is configured**

- Status bar: The status bar displays following contents from left to right: report load process schedule, current report name, current report edit status, time filter band, current system date and time.

### 4.3 Introduction to Menu Command/Tool Button

**Table 4-1 Normal report configuration menu command schedule**

Menu Item			Toolbar Icon	Function Instruction
File	Save File			Save the open report page (Only after the operation of saving document, the editing content of the report page can be saved).
	Page settings			The menu is used to set page layout, page edge, page header, page footer, etc. different types of the printer has different page setting interface .
	Print Preview			The menu is used to preview the open page to be printed.
	Print			Print the current report page
	Close File			Close the open report page
	Exit			Exit the report browse
Edit	Conditional Filtration	Previous day		Time filter band moves forward for one day
		Next day		Time filter band moves backward for one day

Menu Item			Toolbar Icon	Function Instruction
		Custom		Custom filter condition
	Protection	Restores the protection of work sheet		The report of this page is read-only.
		Undo worksheet protection		The report of this page is in editing mode
		Set protection password		Set password for editing mode
	Refresh tree			Search the report of the current project directory again, refresh and display the currently edited report.
Tool	History Report	Data source configuration		History data source driver selection and driver configuration
		Query condition configuration		Set query parameters and select the tag name
	Statistical server			View status of the statistical server
	Print server			View the status of the print server
	Configuration			The function is not available


## 4.4 Introduction to Main Functions

### 4.4.1 Conditional Filtration

The report browse searches the report of the current report project according to the filter condition. The result is displayed in the navigation area.


#### Previous day



Click the button , the report configured in previous day (the day before the currently displayed report) is displayed below "Generated Reports" in the navigation area.

#### Next day



Click the button , the report configured next day (the day after the currently displayed report) is displayed below "Generated Reports" in the navigation area.

#### Custom



Click the button , pop up the condition filter setting dialog box as shown as follows.

**Conditional Filtration**

Starting: 2021-7-27 Stop: 2021-7-27

File Name:

Alias's Cell Content Query

Conditional	Report Name	Alias	Alias's Cell Context
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Invalid	<input type="text"/>	<input type="text"/>	<input type="text"/>
Invalid	<input type="text"/>	<input type="text"/>	<input type="text"/>

OK Cancel

**Figure 4-6 condition filter**

- Starting: Start time of the condition filter.
- Stop: End time of the condition filter.
- File Name: Input the report name to be searched. It supports fuzzy search by key word.
- Conditional: The logic relationship of the searched cells. There are three relationships: Invalid, AND, OR.
- Report Name: The name of all configured reports and All Sheets item are listed in the pull-down list.
- Alias: All the cell alias of the report is listed in the pull-down list (Alias should be set in the configuration. Refer to Alias setting in 0 for details).
- Alias's Cell Content: Input content of the alias cell to be searched. It supports fuzzy search by key word (If nothing is input, all is output).

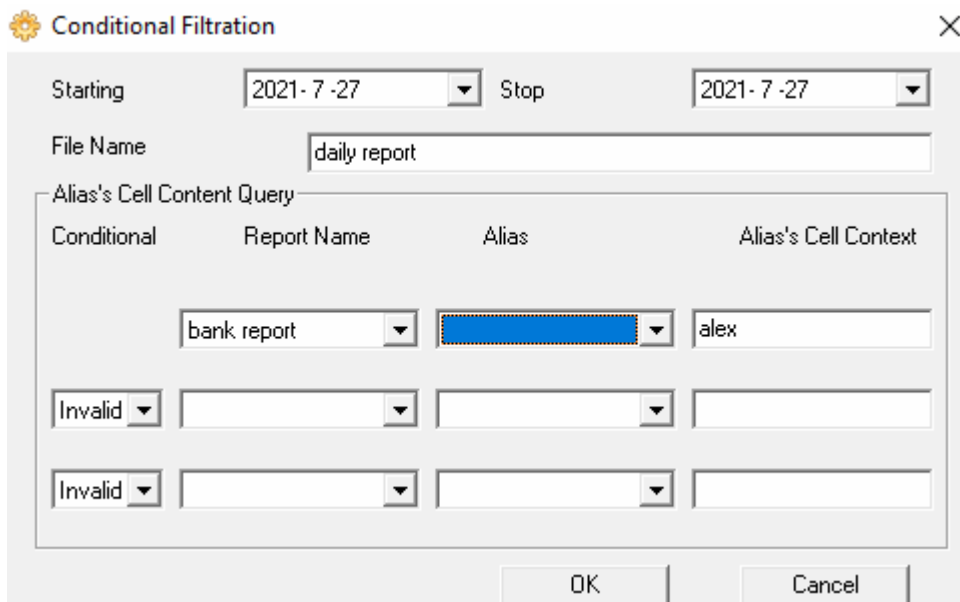


**Tip:**

**When setting custom condition filter, start date/time can't be earlier than end date/time.**

**Example 1:** Search all daily reports in Jul 27<sup>th</sup>, 2021.

Setting is shown as follows (Users can also select "Daily Report" in the pull-down list below "Report Name" in the box "Alias's Cell Content Query". Starting time is set as follows and other items are not set). Click "OK" and all class reports of this day are displayed below "Generated Report" in the navigation area.



Conditional Filtration dialog box. The "Starting" date is 2021-7-27 and the "Stop" date is 2021-7-27. The "File Name" is "daily report". The "Alias's Cell Content Query" table is as follows:

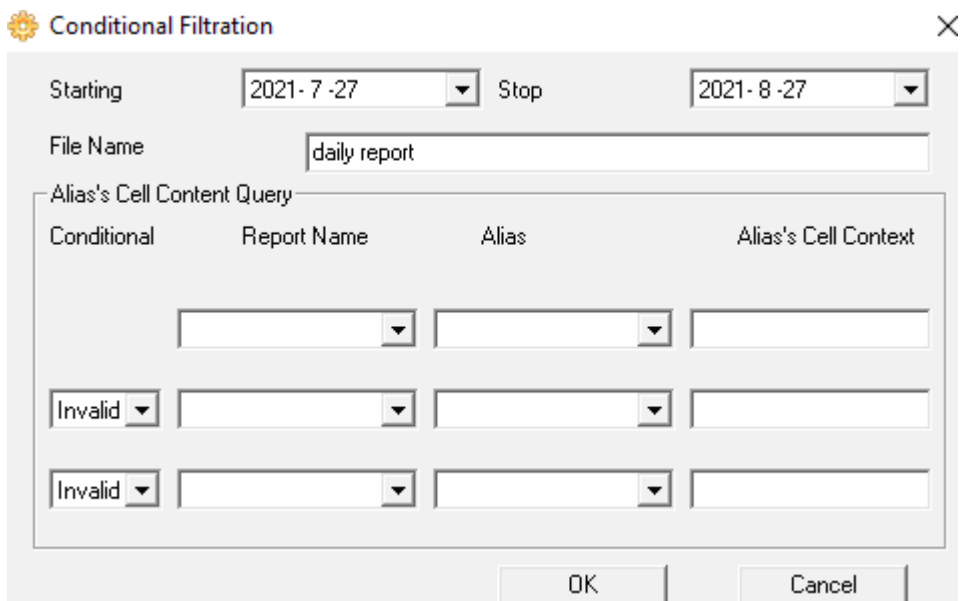
Conditional	Report Name	Alias	Alias's Cell Context
	bank report		alex
Invalid			
Invalid			

Buttons: OK, Cancel

**Figure 4-7** Filter all class reports in Jul 27<sup>th</sup>, 2021

**Example 2:** Search the class report whose supervisor is "alex" from Jul 27<sup>th</sup>, 2021 to Aug 27<sup>th</sup>, 2021.

Setting is shown as follows. Click "OK" and the class reports whose supervisor is "Alex" of this time span are displayed below "Generated Report" in the navigation area.



Conditional Filtration dialog box. The "Starting" date is 2021-7-27 and the "Stop" date is 2021-8-27. The "File Name" is "daily report". The "Alias's Cell Content Query" table is as follows:

Conditional	Report Name	Alias	Alias's Cell Context
Invalid			
Invalid			

Buttons: OK, Cancel

**Figure 4-8** Filter the class report whose supervisor is "Alex" from Feb 17<sup>th</sup>, 2021 to Aug 27<sup>th</sup>, 2021



**Attention:**

- Reports filtered by means of "Alias" item are those whose alias is set. The

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reports before setting alias cells can't be filtered

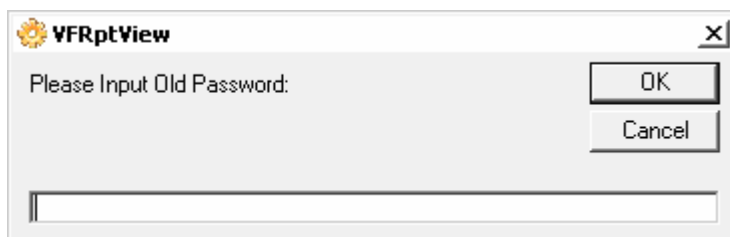
- If users want to edit the alias cell manually and the edited content is used in the alias filter, users need to edit content of the cell at the time of "Generating Report". Otherwise, the content edited can't be found. For example, users open a report below "Generated Report" and edit the alias cell, the content saved can't be found in the alias filter.
- 

#### 4.4.2 Protection

##### Unlock Work Sheet

The operation mode in which the current report page can be carried out includes read-only and edit. The default operation mode is read-only. Undo the worksheet protection first, and then edit

reports. Click the item **Edit/Protection/Unlock Work Sheet** on the menu bar or the button  on the toolbar, pop up an input editing password dialog box. Input the editing password (original password: supcon) and click "OK" to undo worksheet protection and switch to the editing mode.



**Figure 4-9** Input editing password

Users can edit reports in the report browse when the report is in the editing mode.




---

**Tip:**

When the real time library report is configuring reports, only the part where cell lock is canceled in the editor can be edited. And all cells of configured reports and history reports can be edited.

---

##### Lock Work Sheet

Click the item **Edit/Protection/Lock Work Sheet** on the menu bar or the button  on the toolbar to switch to "Read-Only" mode.!



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**Tip:**

For report configurations in Excel mode, worksheet protection mechanism of browse is different from that of Excel. The editing password is valid only in the browse. The default protection password of Excel files in the hard disk is still "supcon". Don't modify the

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**password in the Excel or protection mechanism of report files; otherwise the report browse load fails!**

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## Set Protection Password

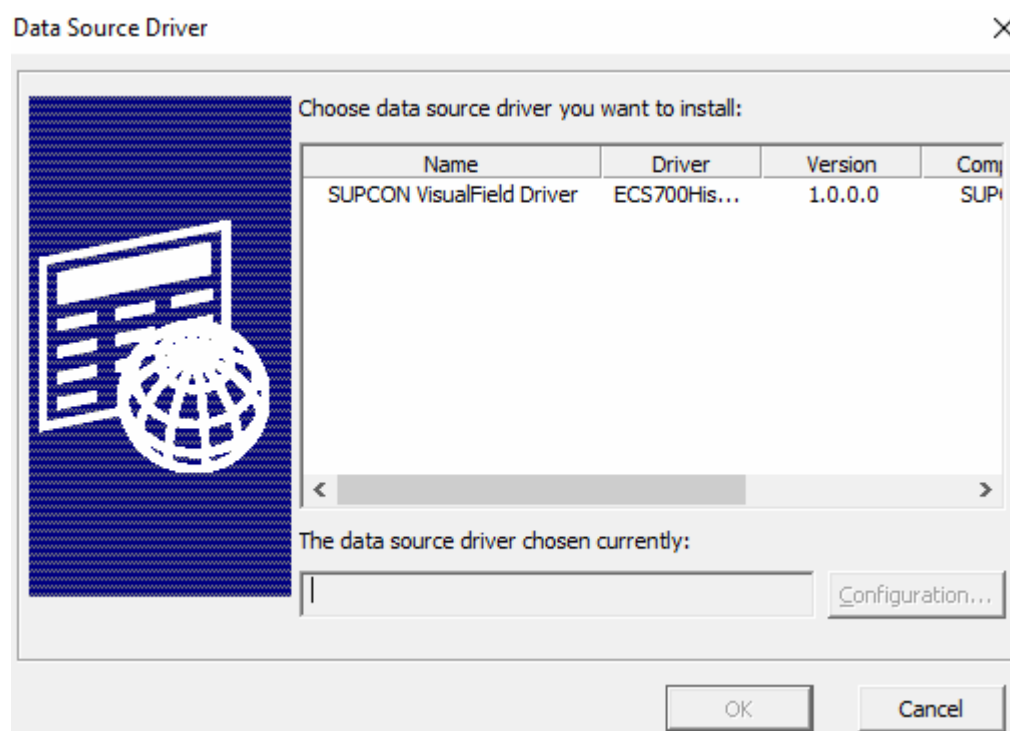
The default protection password is supcon when reports are in the edit mode. Users can modify password through "Set Protection Password". Click the menu **Edit/Protection/Set Protection Password** on the menu bar, pop up an input original password dialog box. Input the original password supcon, click "OK" and pop up an input new password dialog box. Input a new password, click "OK" and pop up "Input new password again" dialog box. Input the new password again, click "OK" and system will prompt "You have succeeded to set a new password. Please remember it." The protection password is valid only in the report browse.

### 4.4.3 History Report Data Source Configuration

History report supports driver extension and users can design other history library driver according to the driver interface files.

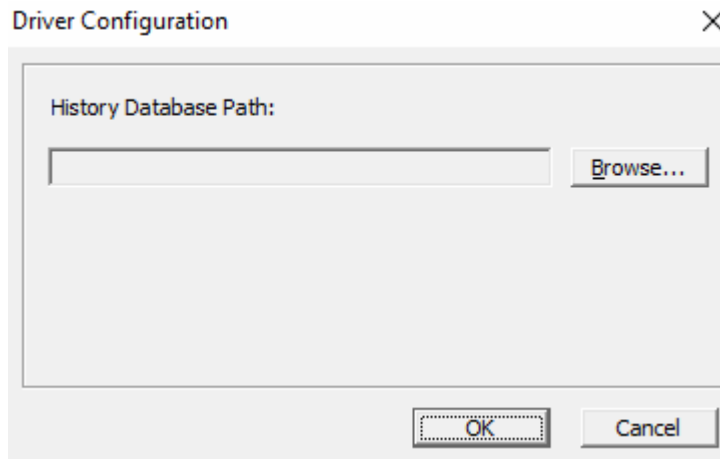
Steps for data source configuration:

1. Select the menu **Tool/History Report/Data Source Configuration** and pop up a configuration data driver dialog box as shown in Figure 4-10 .



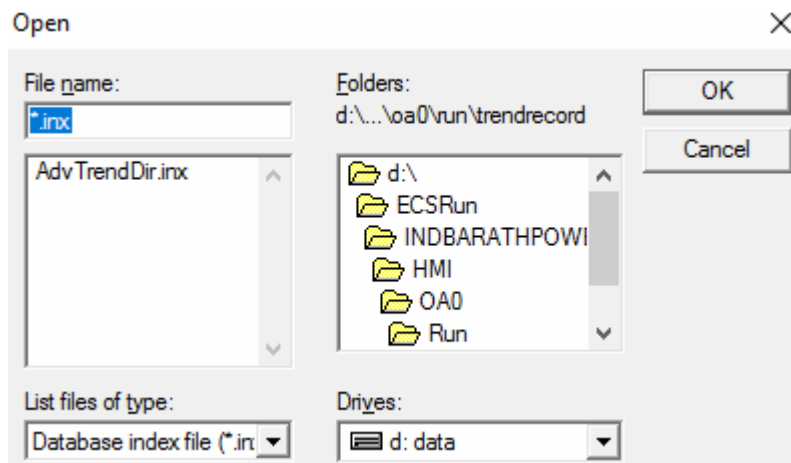
**Figure 4-10 Configure data driver**

2. Click the button "Configuration", and pop up the driver configuration dialog box, as shown as follows.



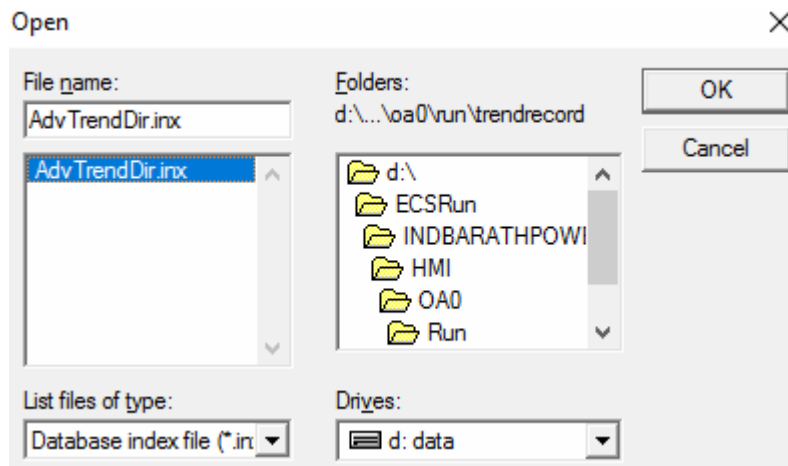
**Figure 4-11 Configure driver**

3. Click the button "Browse" and pop up the history data library path selection dialog box, as shown as follows.



**Figure 4-12 History data library path selection**

4. Select the data library path  
(D:\ECSRun\INDBARATHPOWER\HMI\OA0\Run\TrendRecord, "INDBARATHPOWER" is a project name). If the driver library is loaded properly, system will find out the start date and end date of the current history library.

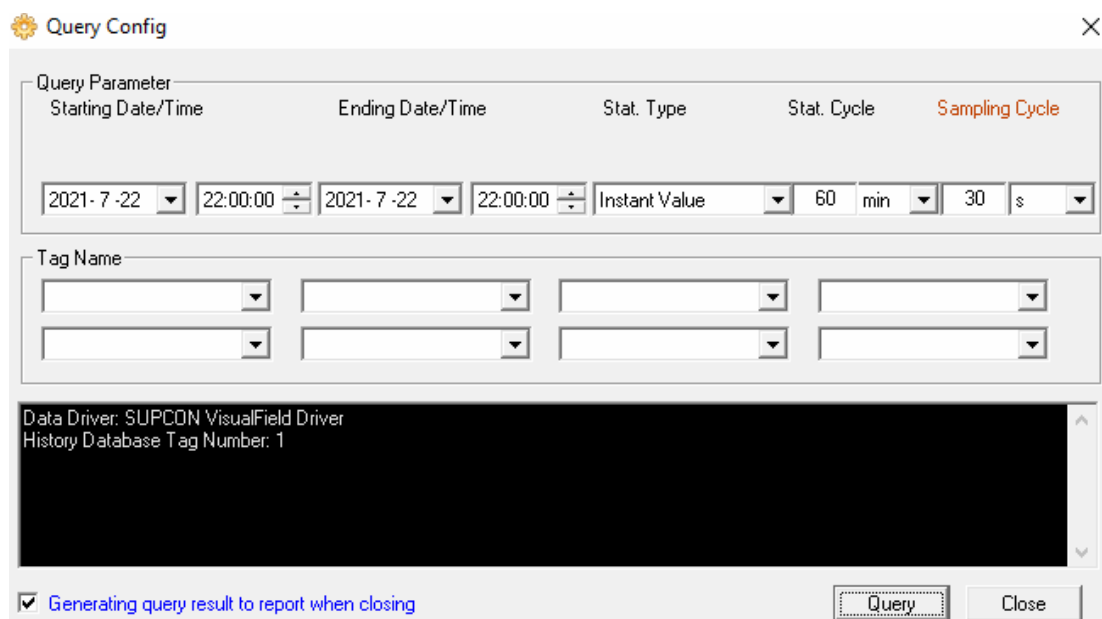


**Figure 4-13 History library drive configuration interface**

5. Click "OK" to complete the driver configuration.

#### 4.4.4 History Report Query Condition Configuration

1. Configure the query condition of history reports according to the configured driver information. Perform extend statistic configuration by querying the history library data. Software supports four statistic types: instantaneous value, average value, Max. and Min. Click the menu **Tool/History Report/Query Condition Configuration** and pop up the query configuration interface, as shown as follows:



**Figure 4-14 Query configuration**

- Stat. Cycle: the statistical period of data between the start time and the End time.
- Sampling cycle: the period of sampling data from the history trend library between the start time and the end time.
- Stat. Type: statistical type of data.

For example, the start time is 2010-7-2 12:00:00~2010-7-2 14:00:00, the statistic type is average value, statistic cycle is 30min, sampling cycle is 1min. In starting time, collect 120 points with the sampling cycle of 1min, count the average of 30 points collected in each 30 min and record into report generated by searching results as a point, i.e. output 4 points finally (average value).

Set the starting date and ending date, statistical type, statistical period, sampling cycle and select tag name and click the button "OK" to display the query result in the black area shown in figure below.

**Query Config**

Query Parameter

Starting Date/Time	Ending Date/Time	Stat. Type	Stat. Cycle	Sampling Cycle
2021-7-22	22:00:00	Instant Value	60 min	120 s

Tag Name

A_FT_203.PV	A_FT_203.PV	A_FT_203.PV	A_FT_203.PV
A_FT_203.PV	A_FT_203.PV	A_FT_203.PV	A_FT_203.PV

```

A_FT_203.PVQuery...Success!    Time-consume: 0.0020625    Available Point: 1
A_FT_203.PVQuery...Success!    Time-consume: 0.0009375    Available Point: 1
A_FT_203.PVQuery...Success!    Time-consume: 0.0029375    Available Point: 1
A_FT_203.PVQuery...Success!    Time-consume: 0.002875     Available Point: 1
A_FT_203.PVQuery...Success!    Time-consume: 0.000875     Available Point: 1
8 Tag(s) Consume Total Time: 0.015625
  
```

☒ Generating query result to report when closing

Query Close

Figure 4-15 Searching results



**Tip:**

For tags of **BOOL** type, it is meaningless when the statistical type is average value, Maximum, Minimum.

- If "generating query result to report when closing" is selected, click the button "Close" after data query, a history report will be configured automatically after the dialog box is closed. Otherwise, no report is configured.



**Tips:**

- Tag number queried every time is from 1 to 8.
- Set proper sampling period, statistical period and query time band lest the statistical time is too long.
- Maximum of statistic items amount is 1000 and maximum of sampling points amount is

---

1000.
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4.4.5 Statistical Server

The statistical server interface is used to view the status of the statistical server, as shown as follows.



Figure 4-16 Statistical Server Information

4.4.6 Print Server

The printing server interface is used to view the status of the printing server, shown as follows.

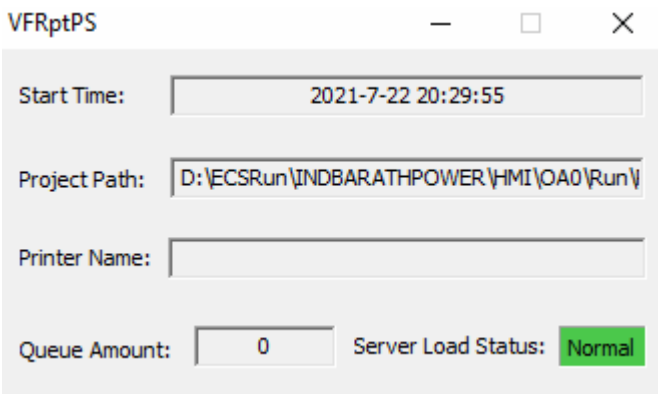
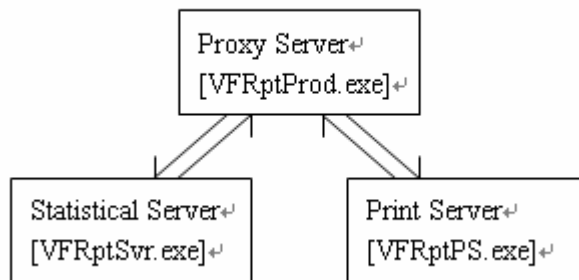


Figure 4-17 Printing Server

## Section 5 Report Server

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Report server includes real time proxy server, real time statistical server and real time print server.



The report server has no main interface. The generated report server starts up with real-time supervision software. The report server will load the current project designated in the report editor with the running project automatically in the start-up.

Exit the report server automatically when exiting real-time monitoring software.



---

### Tips:

- Users can perform the startup configuration of the report server before starting up the real time supervision: Select Start > OMC > System Global Settings, select "Monitoring" tab in the pop-up dialog box and then select Start up report server.
  - The report server will judge whether the current report project exists and give out a warning during the start-up. If there is no "Valid" report project, the server can't work normally.
  - Exit HMI and exit the report server automatically.
-

## Section 6 Notes for Application

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1. In Excel report mode, when the report browser/report server is running, it is not allowed to perform relevant operation of Excel in local computer and open other software in which Excel process is used.
2. Install Microsoft Office Excel before the Excel report is configured (Microsoft Office Excel 2013 with which Microsoft Office Excel 2010, Microsoft Office Excel 2007, Microsoft Office Excel 2003 and Microsoft Office Excel 2000 are compatible recommended) and uninstall WPS
3. The report editing software and the report browser can't be opened simultaneously.
4. When the supervision is started up, Excel document will be forced to close and system doesn't prompt saving file. It is suggested that users don't open Excel report mode editor and Excel worksheet simultaneously.
5. Ways to stop the configured report:
  - There are several operation teams in the configuration. If users want to make some report invisible to some operation team, users only need to delete the configured report item of the corresponding operation team in the configuration software.
  - If some report is no longer required by any operation team, users need to delete the corresponding report page in the report editor and the report item of all operation teams in the configuration.
6. When the printing queue is too long, the generated reports are not sent to the print queue.
7. When the disk space is less than 500M, reports are not any longer configured.

## Section 7 Revision

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*Table 7-1 Revision history*

Document Version	Applicable Software Version	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First release
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots.