Fama Traffic Signal Controller Control Upper Computer Software 2024

Operation manual

No	content	date
1	First version release	2025-5-29
2		
3		
4		

1. Introduction

1.1 purpose of writing

This system is designed for the configuration of the Traffic Signal Controller machine of the Fama traffic route 48 (GBT20999-2017). This manual is intended to help the relevant personnel to quickly and quickly familiarize themselves with the system to configure the Traffic Signal Controller.

2. Overall software design

2.1 Main functions

The main functions of this system include:

1. basic configuration
2. detector configuration
3. Setting of the crossing channelization map
4. The configuration of the configuration scheme
5. Real-time status monitoring
6. status detection
7. adaptive parameters
8. countdown configuration
9. Emergency priority configuration
10. Phase configuration
11. Light group configuration
12. detector data
13. Failure log

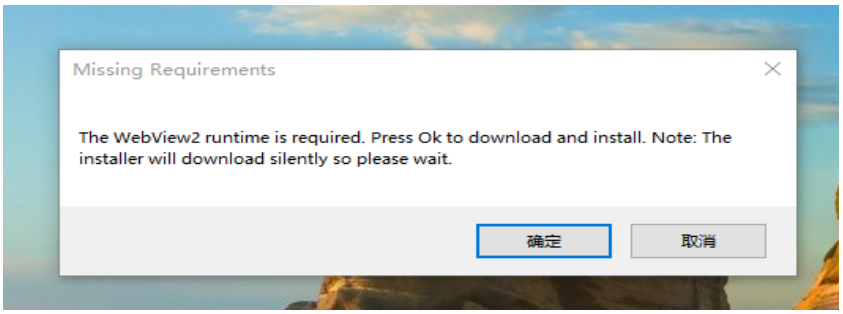
14. Operation log

2.2 Development conditions and operating environment

- Operating system: Windows 7-11 operating system;
- Database: Sqlite local database;
- Platform requirements: Windows platform with Microsoft Edge Webview2.
- Signal machine: version x.x.x.38 and above.

3 installation tutorial

Double-click the program famatsc2024-amd64-installer.exe,Follow the prompts to install.



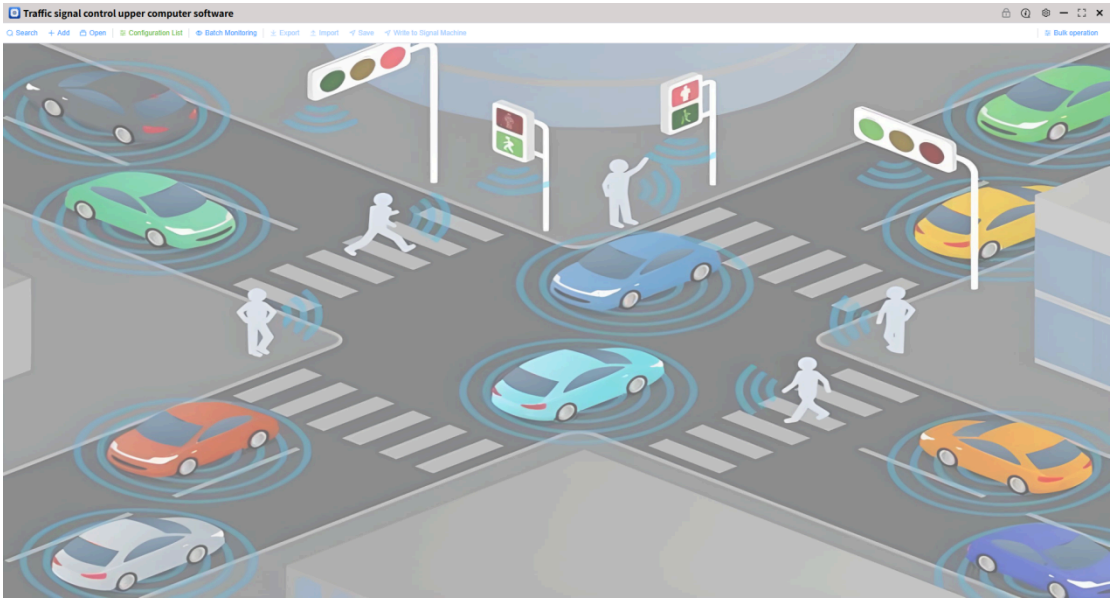
If this prompt is displayed during the run, the running environment WebView2 is missing."OK" to download and install, or download and install yourself in other ways and then run again.

Download link:

https://developer.microsoft.com/en-us/microsoft-edge/webview2/?form=MA13LH

4. Description of use

4.1 Main interface



The operations in the upper right corner are as follows:

- About
- Preference settings (set theme and language)
- Minimize, maximize, exit
- Bulk operation

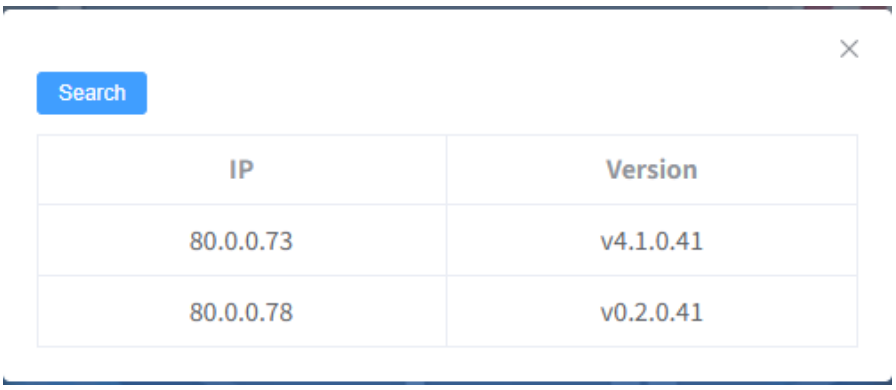
The operations in the upper left corner are as follows:

- Search
- Add
- Open
- List of configurations
- Bulk monitoring
- export
- import
- Re-read
- One-key write

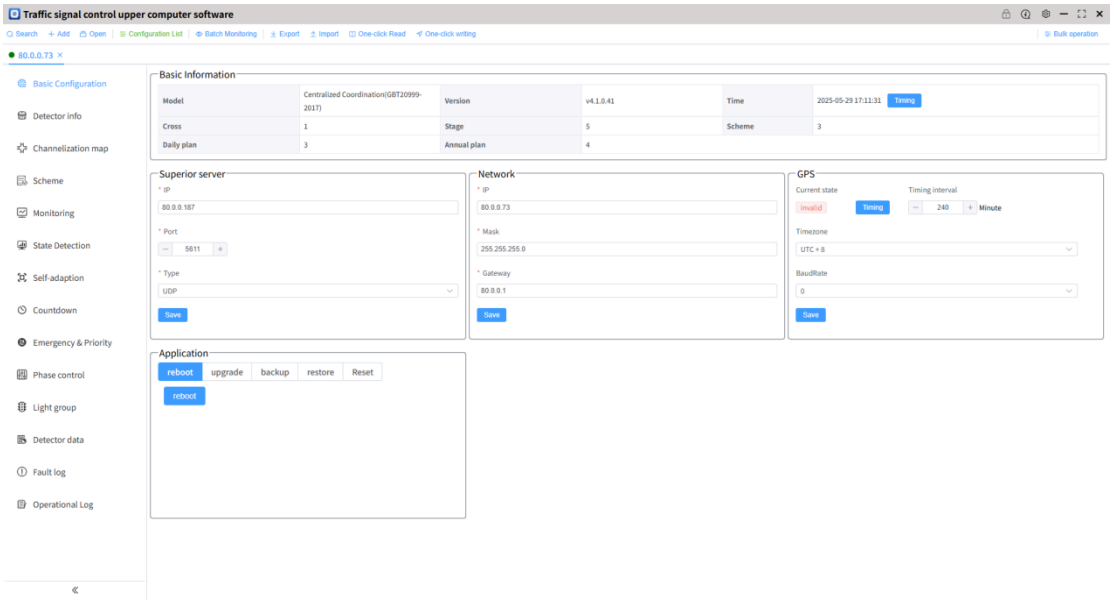
4.2 menu bar

4.2.1 Search

Click Search.



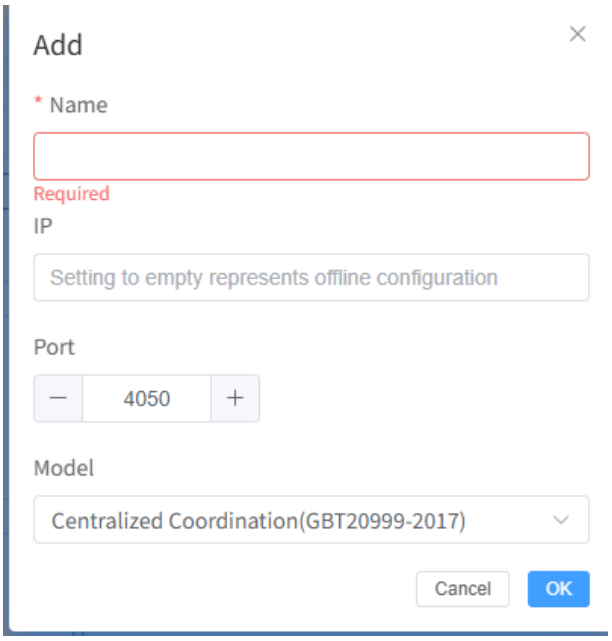
The online Traffic Signal Controller is automatically searched for in the pop-up window. The list shows that the Traffic Signal Controller is successfully found. Double-click the Traffic Signal Controller. The default name is the IP address of the Traffic Signal Controller.After confirming, open the Traffic Signal Controller configuration function menu page, as shown in the following figure:



4.2.2 Add, Open, and Configure List

- Add

Click "Add" to pop up the page as shown in the following figure:



Enter the Traffic Signal Controller name, IP address, and port number, and click OK. If you enter only the Traffic Signal Controller name but not the IP address, the offline mode is used by default. On the page for setting Traffic Signal Controller parameters, different colors on the menu bar represent (green:) Online; red: Offline) has different meanings, and the icon represents offline editing devices.

- **Open**

In the pop-up window, you can choose to export the configuration data as the offline mode setting. The suffix of the configuration file is.fmtsc"

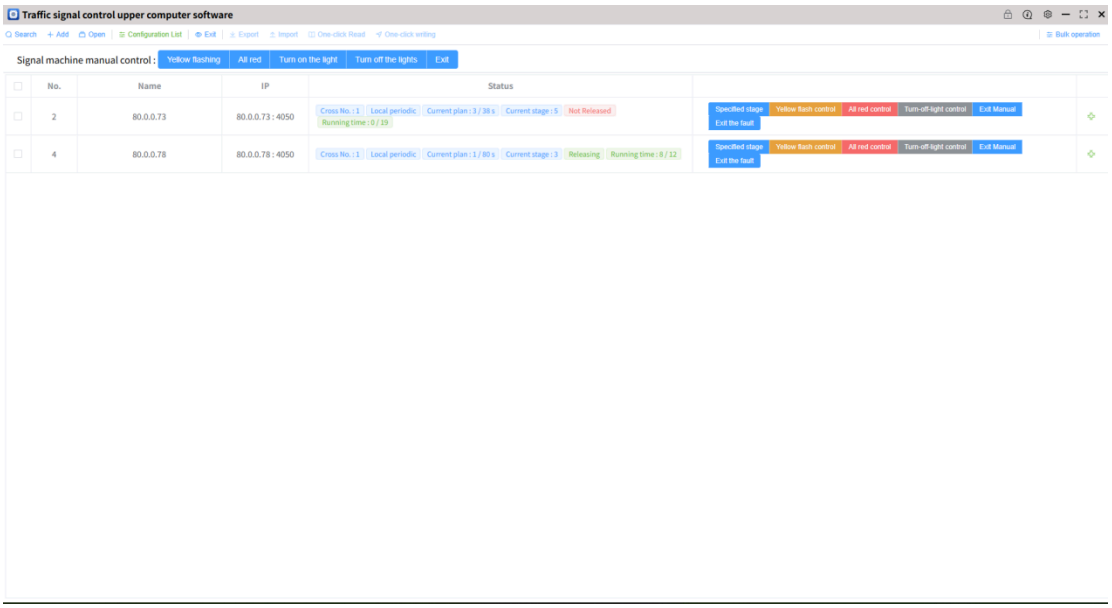
- **List of configurations**

The configuration list displays all the added devices, as shown in the following figure.

Name	IP	Status	
80.0.0.73	80.0.0.73 : 4050	Online	Delete
80.0.0.78	80.0.0.78 : 4050	Online	Delete
192.168.2.136	192.168.2.136 : 4050	Offline	Delete
192.168.1.126	192.168.1.126 : 4050	Offline	Delete
80.0.0.79	80.0.0.79 : 4050	Offline	Delete
111		Offline	Delete

4.2.3 Bulk monitoring

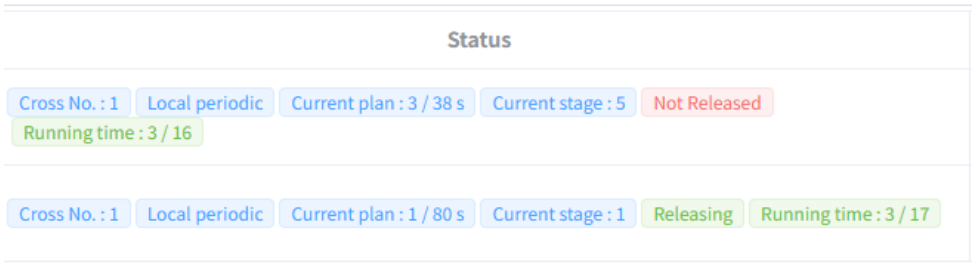
If multiple online Traffic Signal Controller machines have been added to the upper computer, you can monitor and control the online Traffic Signal Controller machines in batches. The following figure is displayed.



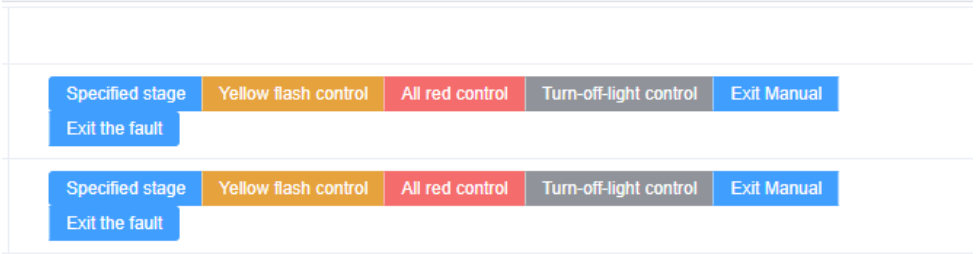
Traffic Signal Controller machine manual control: Blinking yellow, full red, light on, light off, and exit; This Control is the global Control of the Traffic Signal Controller. If multiple intersections are configured on the Traffic Signal Controller, the Control takes effect at all intersections. Multiple Traffic Signal Controller machines can be selected from the list to perform special

Control on multiple Traffic Signal Controller machines at the same time.

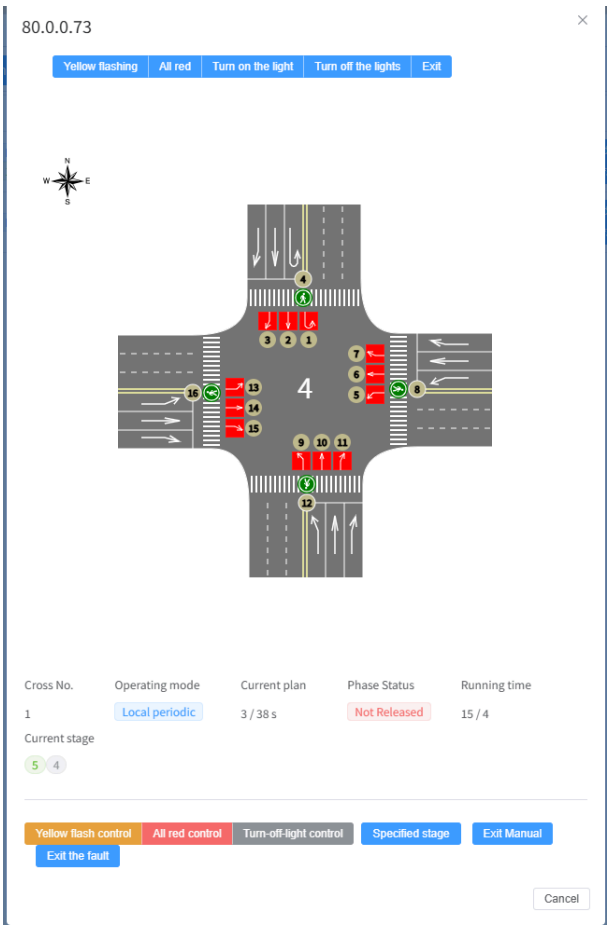
The status column of the list displays the details of the status of the Traffic Signal Controller crossing being released. (Operation intersection, operation mode, current solution, current phase, release status, and operation duration) The following figure is displayed:



The list status displays the detailed information of the Traffic Signal Controller machine crossing being released. (Operation intersection, operation mode, current solution, current phase, release status, and operation duration) The following figure is displayed:



To monitor the intersection zoning map, click the channelization map icon on the right side of the intersection, and the pop-up window is as shown in the following figure:



The Control in the upper part of the channelization diagram is still the global Control of the Traffic Signal Controller, that is, it takes effect for all intersections of the Traffic Signal Controller. In the lower part of the channelization diagram, the Control button is displayed. The Control takes effect at this intersection.

When the batch monitoring page is not displayed Batch Monitoring , the icon is displayed after the batch monitoring page is displayed. After the batch monitoring page is displayed Exit , the icon is displayed after the batch monitoring page is displayed.

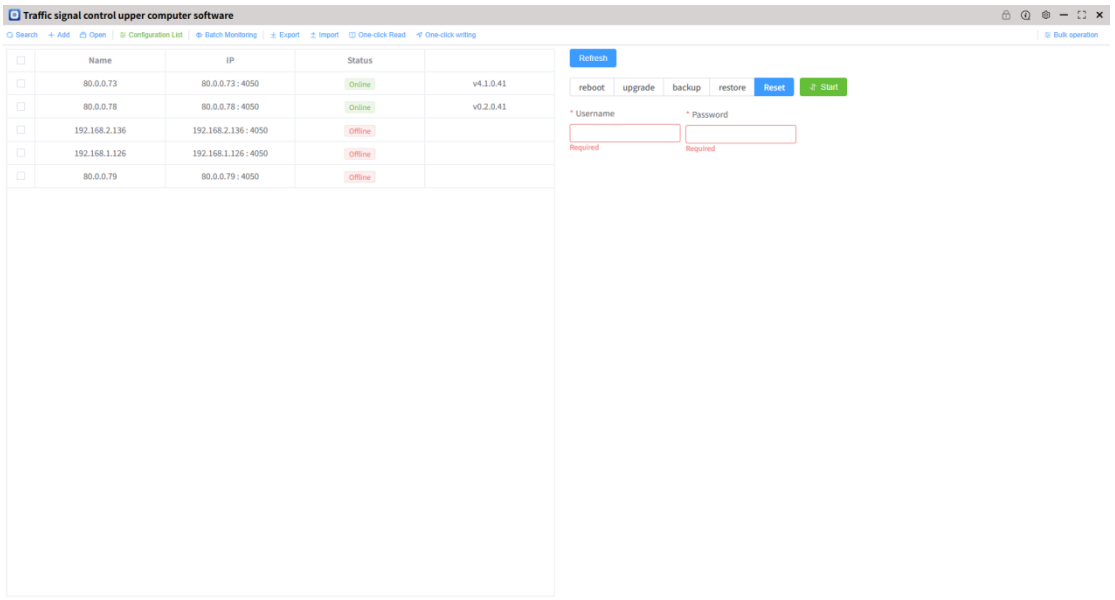
4.2.3 Import, export, re-read, and write comments

The Traffic Signal Controller configuration data can be exported and saved. The file name extension is fmtsc.To import configurations

to the Traffic Signal Controller, One-click writing click Write to write them to the Traffic Signal Controller. If you do not want to use the imported configurations, One-click Read click Read again.

4.2.4 Bulk upgrade

On the batch upgrade page, select the Traffic Signal Controller to be upgraded in batches on the left and select the required function on the right. The following figure shows the restart, upgrade, backup, restore, and reset pages.

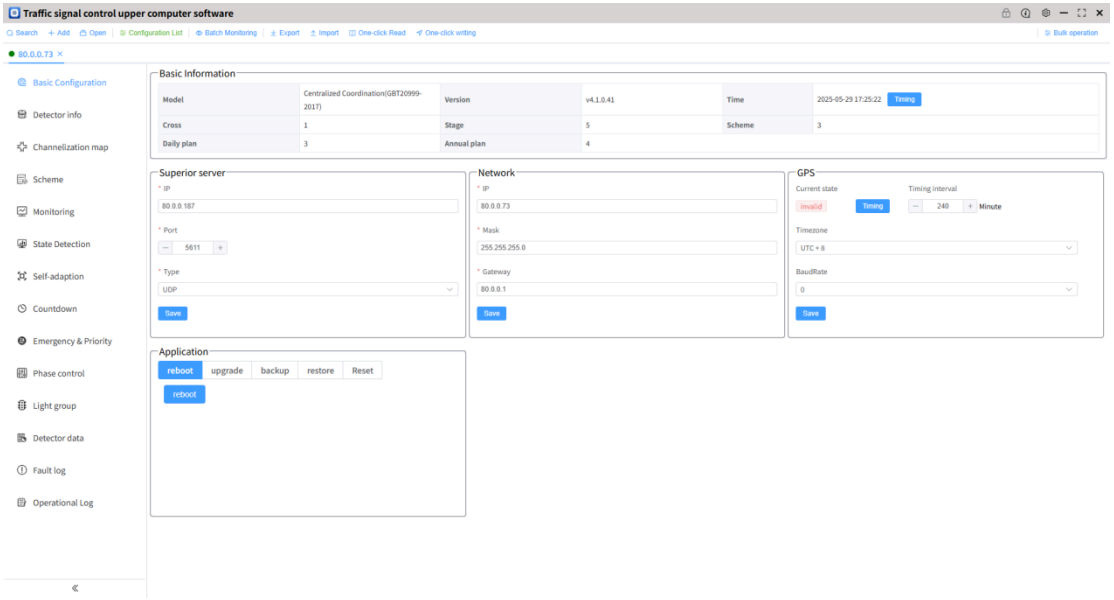


Note: The batch operation function (except the restart function) is supported only when the Traffic Signal Controller has the same password but different IP addresses.

4.3 Traffic Signal Controller machine

4.3.1 Basic configurations

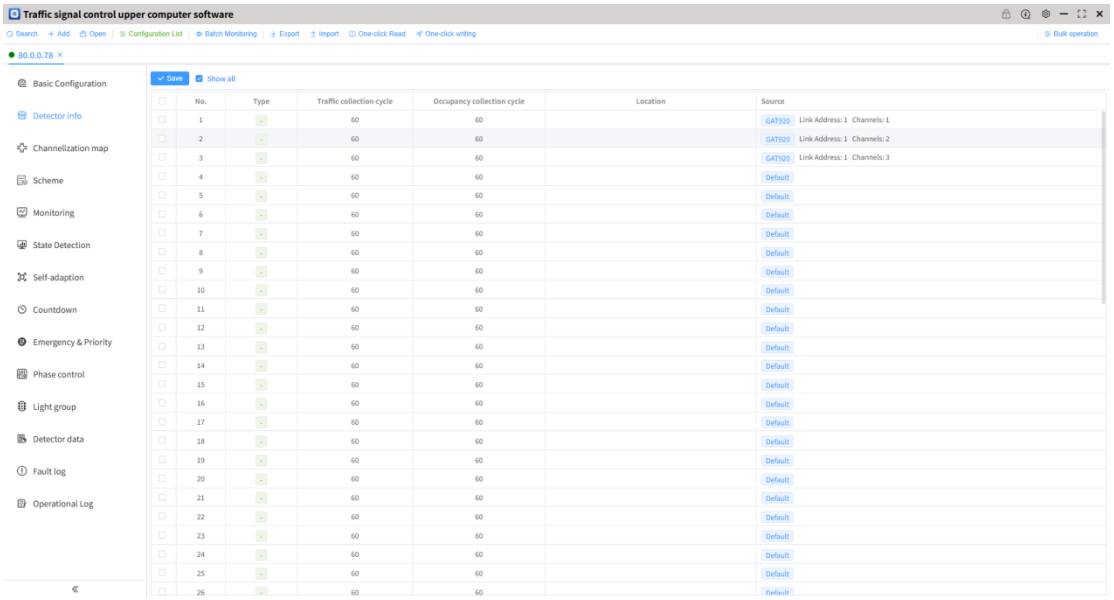
The basic Traffic Signal Controller information displayed on the basic configuration page is as follows: The following figure shows the basic information, upper-level server, network, GPS, and application module pages.



- Basic data: displays Traffic Signal Controller model, version, time (click the time button), number of used intersections, total number of phases, total number of plans, total number of daily plans, and total number of annual plans.
- Upper-level server: If the IP address and port number are set, the Traffic Signal Controller actively reports data to the Traffic Signal Controller.
- Network: You can set the IP address of the Traffic Signal Controller. After the modification, restart the Traffic Signal Controller for the modification to take effect.
- GPS: It can display whether the GPS is working properly. If it is online, click the time calibration button to check the time. You can change the time zone based on the location of the customer's time zone. The baud rate is the GPS baud rate. The default value is 9600. After the GPS data is modified, restart the Traffic Signal Controller for the modification to take effect.

4.3.2 Detector configuration

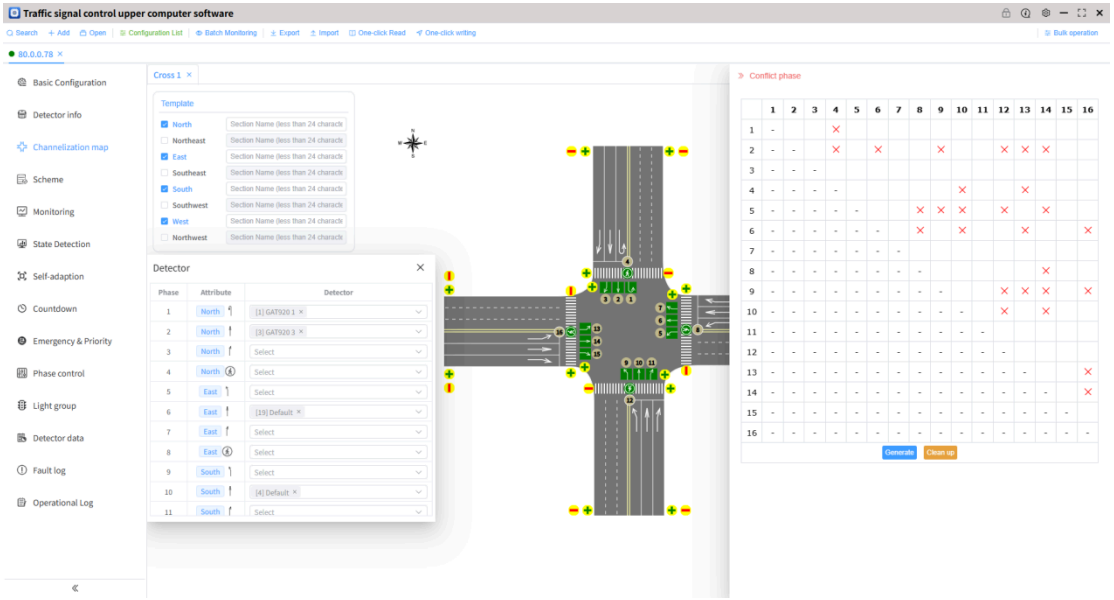
On the detector configuration page, you can set the detector type, traffic collection period, usage collection period, location, and source information. The following figure shows the page.



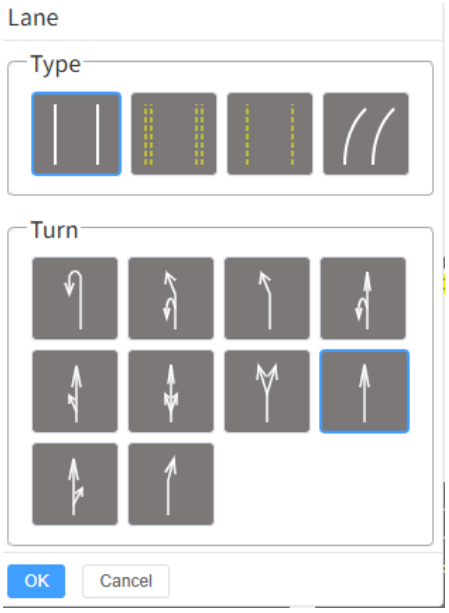
- Types: coil, video, geomagnetic, microwave detector, ultrasonic detector, infrared detector;
- Traffic collection period and usage collection period: The Traffic Signal Controller adjusts the phase release time based on the collected traffic and usage. The collected data is valid only when the source mode is set to Default.
- Location: The location information and detector type are only a description field, which does not affect the Traffic Signal Controller operating parameters.
- Source: GAT920, default, pedestrian; After the GAT920 type is selected, enter the link address and channel address. "Default" is to use the I/O port to input data. The "Pedestrian button" can be set to a value from 1 to 8;

4.3.3 Channelization Map

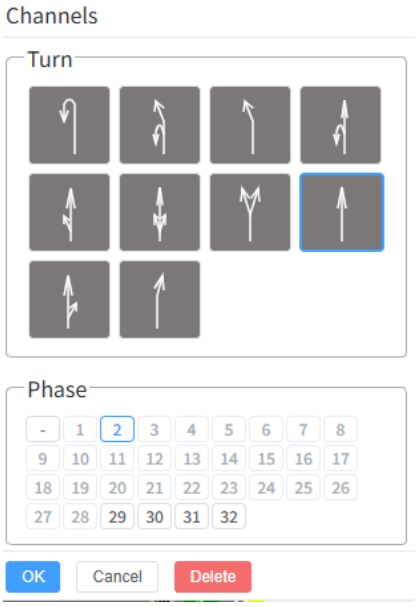
On the channelization map page, you can set the corresponding intersection shape according to the actual usage type of the intersection. The default intersection is a crossroad. You can select a template to quickly set it. Crossroads, north-south intersections, east-west intersections, north-west intersections, east-west intersections, south-west intersections; The phase of the intersection can be set to be bound to the detector one by one. The lane type of the intersection can be modified. It can automatically generate green conflict information at intersections. The page is displayed as shown in the following figure:



- Click Template the button to select the preset intersection type.
- Click + Add to add a new intersection.
- Click "lane" in the channelization map to set the vehicle type and steering information



- Click "Channel" to set the steering type and modify the bound phase information

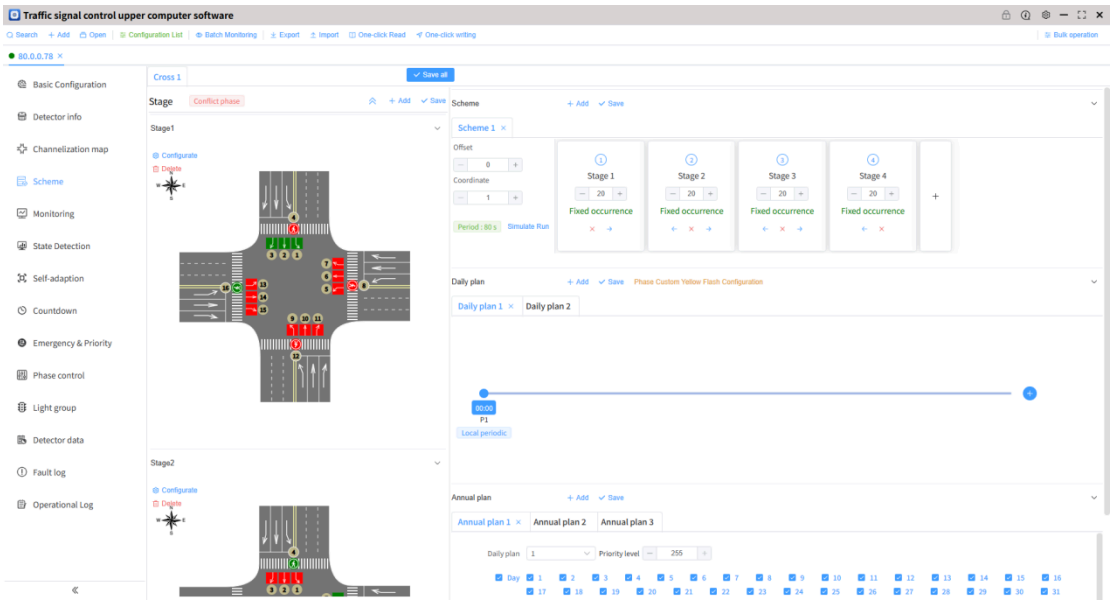


- Selecting different directions in the template module can be directly displayed in the channelization diagram.
- Click the green conflict button and click Generate the Generate button in the pop-up window. The conflict data is automatically generated. Click Clean up the Clear button to clear the generated data.

- The detector pop-up page can bind the phase to the detector one by one.

4.3.4 Plan

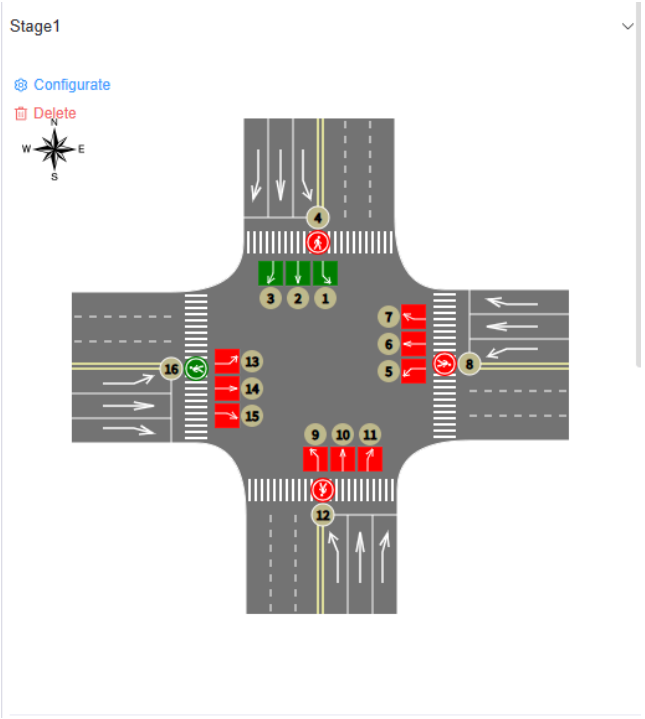
On the scheme configuration page, you can set the basic running information of the Traffic Signal Controller. It includes phases, solutions, daily plans, and annual plans. The Traffic Signal Controller can be configured with multiple intersections. To set the required intersection, you need to select the port number. By default, one intersection is configured, as shown in the following figure.



4.3.4.1 Phases

The left side of the solution page displays all the configured phase information of the intersection. You can also click + Add Add to add a new phase. The new phase is displayed as the default channelization diagram type of the intersection. Click the required

channel phase to release the channel. Click Delete the delete button in the upper right corner of a phase to delete the phase.



Click Configurate the configuration button to display the operation function of the phase that has been configured in the phase. Transition constraints, phase Control (shielded, disabled), early break & late release (phase set in this phase) configuration.

- transition constraints

The constraints are as follows: Direct jump, no jump, and specified phase jump (The specified phase is the phase that has been configured and saved at the current intersection, and does not include the phase itself.)

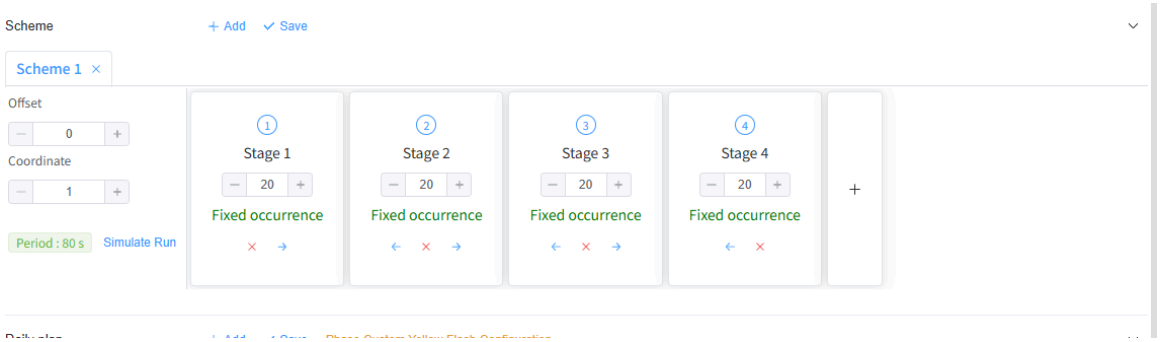
- Phase Control

Phase Control: Shield (When running this phase, the phase is displayed in full red), disabled. (When the phase is running, the phase indicator is off.)

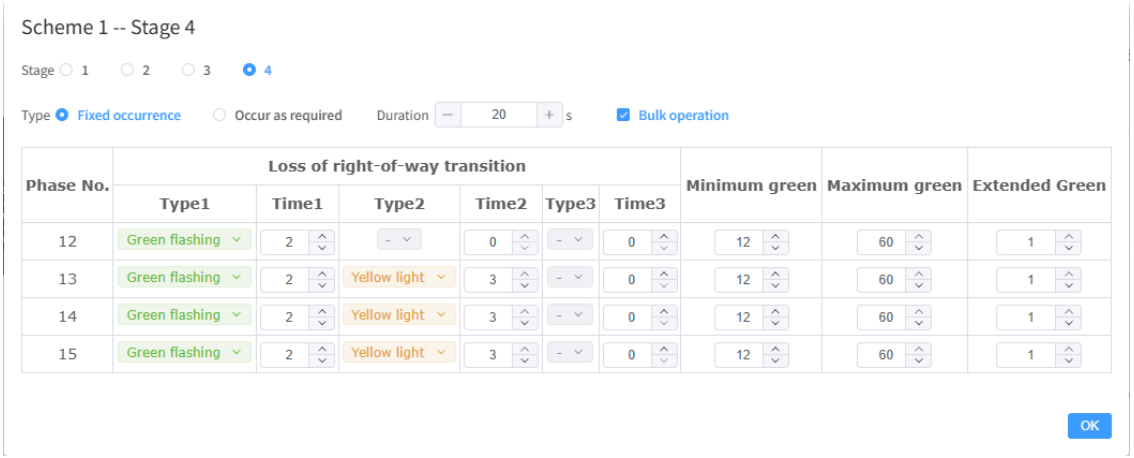
- Early break: the number of seconds that the phase that has been configured to be broken early ends earlier than the end time of the entire phase when the scheme is running.
- Late release: the number of seconds that the phase configured for the phase is delayed to the start time of the entire phase when the scheme is running.
- After the phase setting is complete, click Save Save to save the settings.

4.3.4.2 Plan

The Traffic Signal Controller supports a maximum of 128 schemes, and each scheme supports a maximum of 16 phases. By default, the Traffic Signal Controller is configured with a solution, as shown in the following figure.



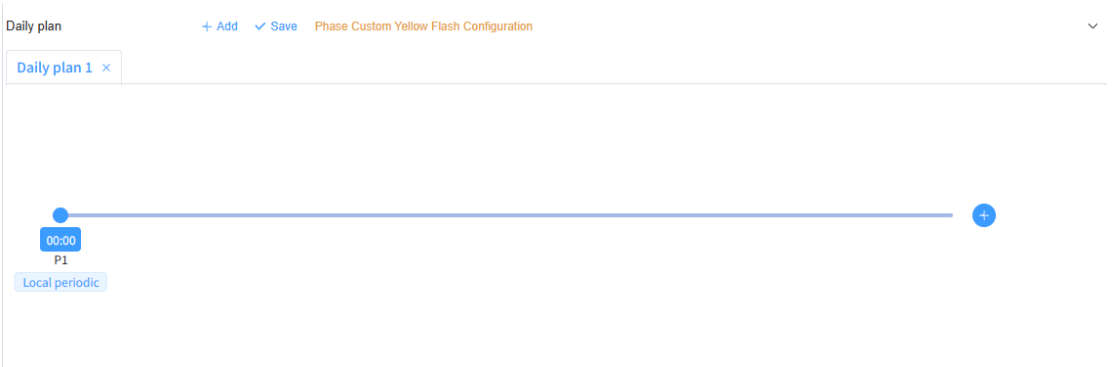
- Click + Add Add to add a new scheme number.
- Select the required configuration scheme phase chain and click + Add to add a new phase.
- The following figure shows the configuration information of the running phase number, type, duration, and phase in the Select Phase dialog box.



- You can directly modify the phase duration in the phase chain, click the left and right arrows to adjust the release sequence, and click ✕ the delete button to delete the phase.
- The phase difference is 0 by default. You can enter the corresponding value according to the actual green wave requirements. The coordination number is the serial number of the release in the selection scheme phase, not the phase number of the phase itself;
- In the configured solution phase, you can click Simulate Run to view the running status of the solution. The following page is displayed:

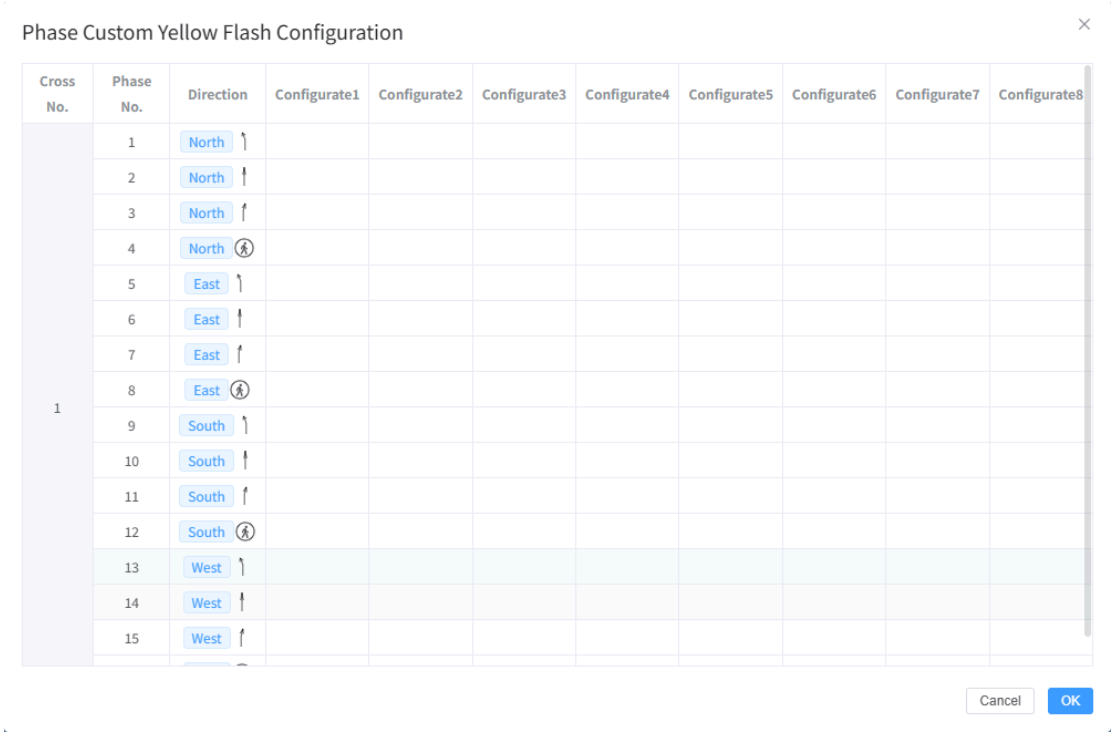
4.3.4.2 Daily Plan

The daily plan refers to the schedule of specific intersections, specific operation plans, and specific control mode operation in a day. The Traffic Signal Controller supports a maximum of 128 daily plans, and each daily plan supports a maximum of 48 sub-time periods.



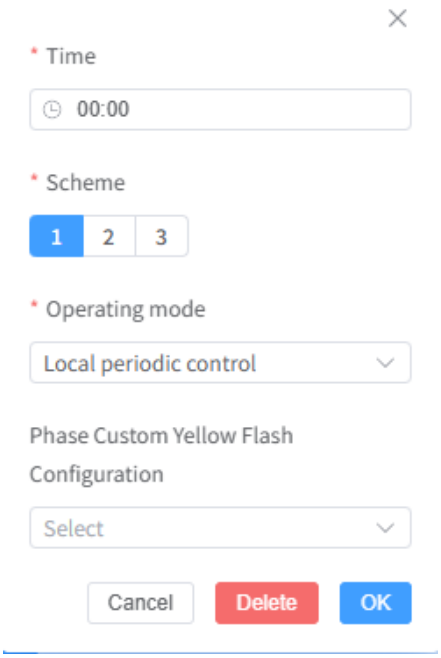
- Click + Add Add to add a new daily plan.
- Click Phase Custom Yellow Flash Configuration the custom Flashing Yellow Signal configuration button for the phase. The pop-up window can be used to set whether the phase of the intersection is flashing yellow.

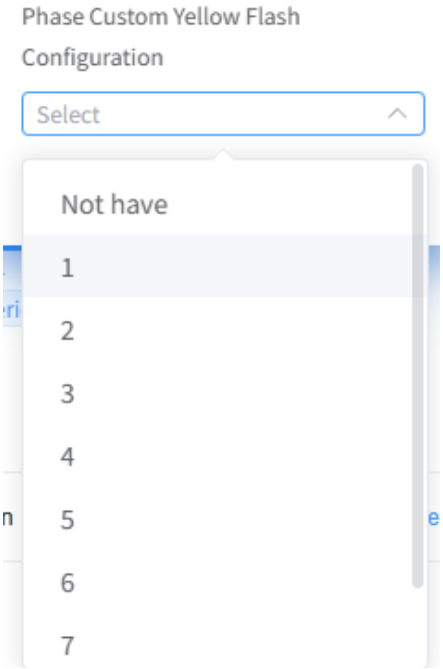
Eight configurations can be used, as shown in the following figure:



If the configuration is 1 to 8, after the phase saving is selected in the configuration, if the configuration is running in the time period table, the corresponding phase will flash yellow.

- Click the Add Time Period button under the daily plan to display a default time: 24: 00, the scheme is the first scheme number of the intersection, and the operation mode is local fixed period;
- Double-click the time period to configure the release time, release scheme, operation mode, and customized Flashing Yellow Signal configuration of phase. The page is displayed as shown in the figure below:





- After the setting is complete, click Save to save the daily plan configuration.

Daily Plan control mode:

Local fixed period, local sensing Control, local coordination Control, local adaptive Control, special Control (blinking yellow, All-Red Signal State, off).

Local fixed period:

When the Traffic Signal Controller runs this mode, the release phase and time are configured according to the scheme, and the phase running time is not adjusted.

Local sense Control:

The Traffic Signal Controller is connected to the hardware sensing device. When running this mode, if the phase does not trigger the hardware sensing device during the release phase, the running phase is minimum green + Clearance Interval.

If the hardware sensing device is triggered in the release phase, the release time of the phase is increased by the green time of the phase. The maximum time is the maximum green 1 set duration.

Local coordination Control:

In this mode, the Traffic Signal Controller automatically adjusts the release time within 3 cycles according to the phase difference and coordination number set in the scheme. In the specified phase, restarting the Traffic Signal Controller will interrupt the stable operation. The Traffic Signal Controller will adjust the release time until it runs stably.

Adaptive Control:

The Traffic Signal Controller is connected to the hardware sensing device, and the detector is bound to the phase one by one; In adaptive mode, the phase receiving detector triggers Traffic Signal Controller. The green light duration is increased or decreased in the next period. The maximum occupancy rate of the phase detector is 100%, and the phase running duration increases to the maximum green + loss of right-of-way duration. When the minimum occupancy rate of the

phase detector is 0, the phase running duration decreases to the minimum green + loss of right-of-way duration.

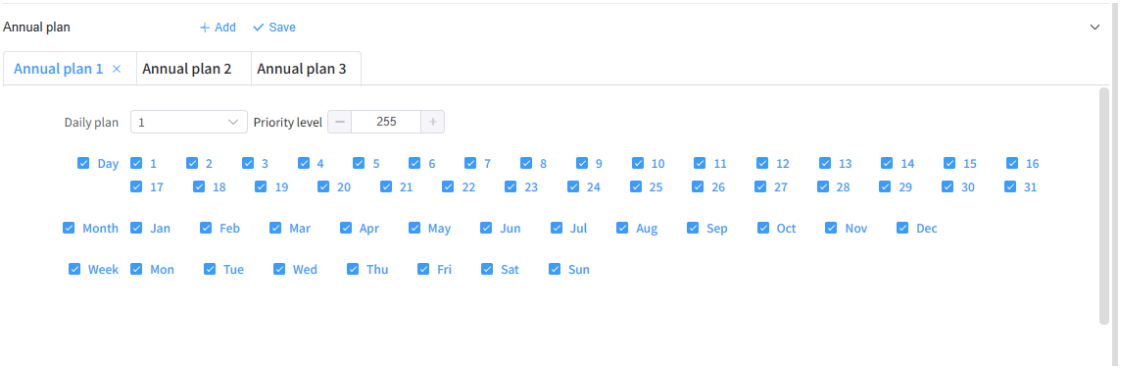
Special Control:

In this mode, the Traffic Signal Controller does not run the scheme and displays the Flashing Yellow Signal, All-Red Signal State, and off status.

Note: When the detector source is "GAT920" in the induction mode and adaptive mode, the Traffic Signal Controller enters the downgrade after the connection is disconnected.

4.3.4.2 Yearly Plan

A maximum of 128 plans can be added to the annual plan. The Traffic Signal Controller selects a plan based on the current time and the priority of the annual plan. For the year plan setting, you need to select the daily plan number, priority, and specific month, date, and week, as shown in the following figure:

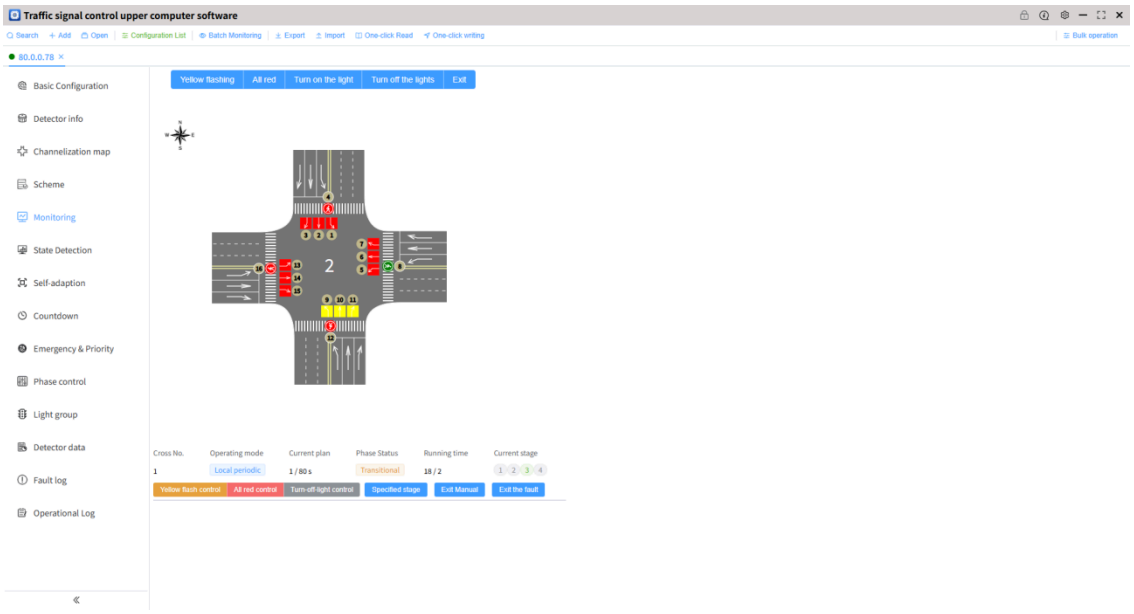


- Click + Add the Add button to add a new annual plan configuration. The default priority is 255, and the lowest priority (0-255, 0 is the highest priority).
- Select the configured daily plan number from the Daily Plan drop-down list box.

- Select the required running date for the day, month, and week, and click Save the Save button to save.

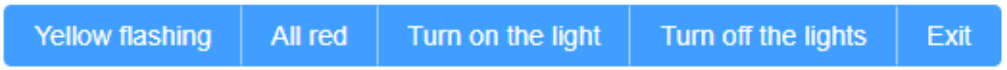
4.3.5 Monitoring

The monitoring page displays the current Traffic Signal Controller intersection monitoring page, as shown in the following figure:



Real-time status monitoring of the Traffic Signal Controller. Current scheme, phase, and running time

- Click the global manual control of the Traffic Signal Controller:

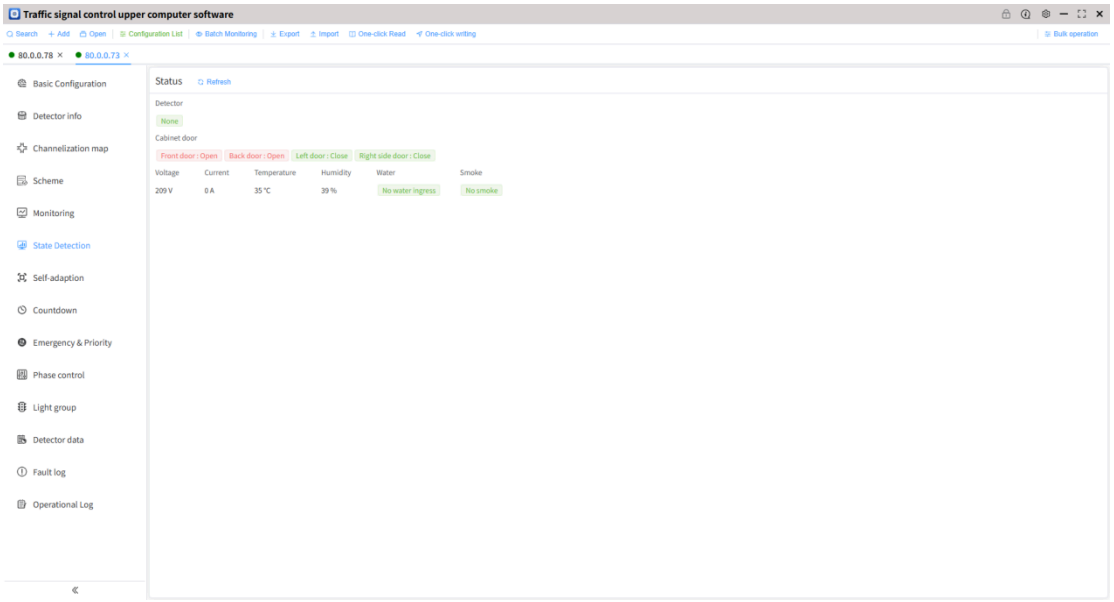


- Current hand control at the intersection:

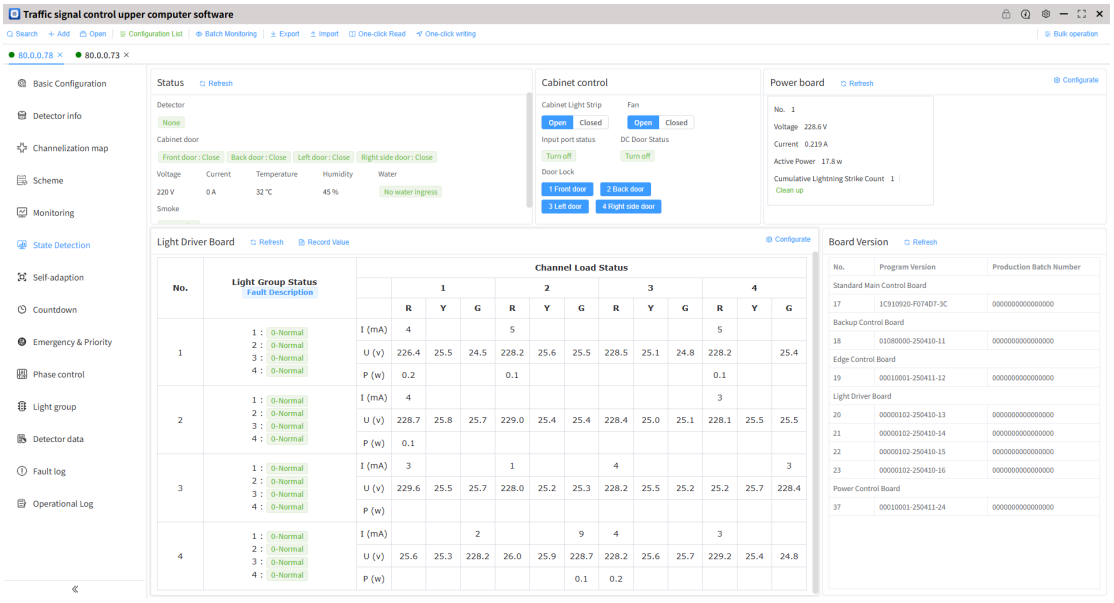
4.3.6 State detection

In the status check, the page display of the Controller Model 22 Controller models is different from that of the 17 Traffic Signal

Controller models. 17 The following figure shows the page of the Traffic Signal Controller.



22 The following figure shows the Traffic Signal Controller machine:



- The current status of the cabinet

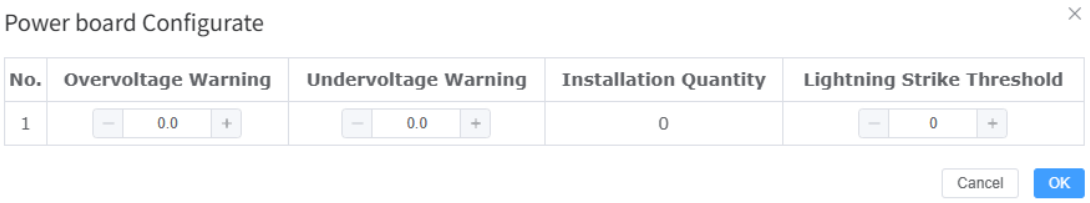
  Includes detectors, cabinet doors, etc

- Edge Control version status

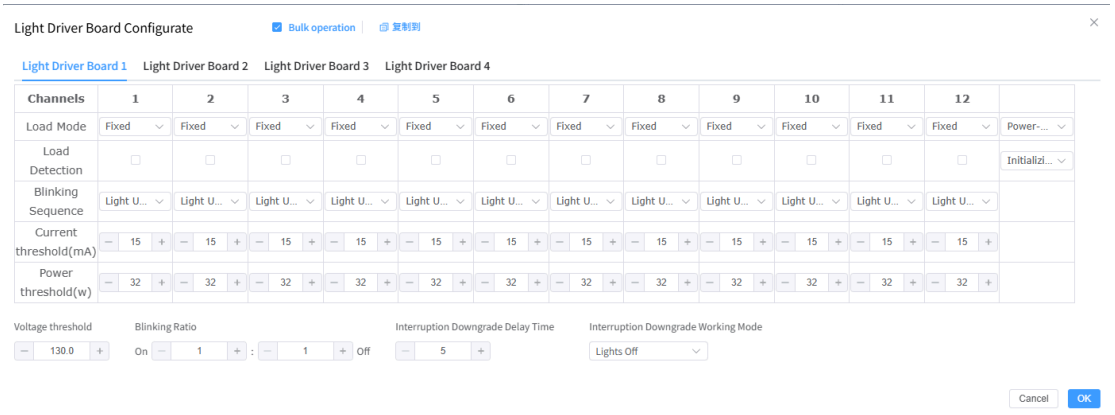
The cabinet light bar, fan, input port status, and magnetic lock status are included. The cabinet light bar and fan can be Control-enabled.

- Power board status

The voltage, current, power, and fault information of the power board (displayed only when there is a fault) are displayed. The "Configure" is used to set the detection threshold of the power board.

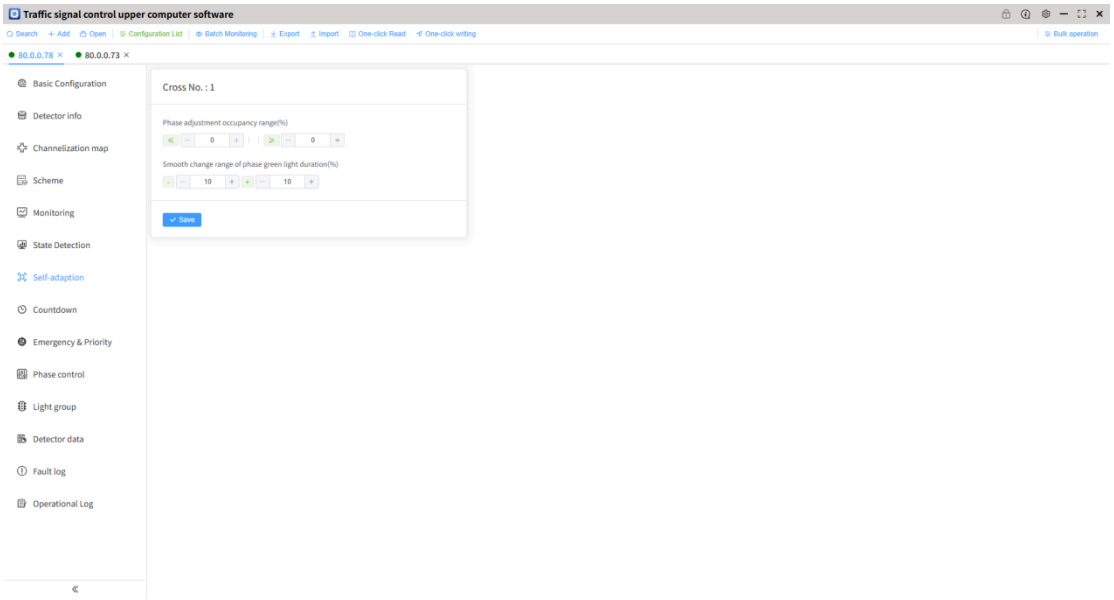


- Light driver board status
  - It includes the status of the light group and the load status of the channel.
  - "Fault Description" is the fault code and its details.
  - "Configure" to set the parameters of the light drive board.



4.3.7 adaptive parameters

The adjustment range of the period duration when the Traffic Signal Controller runs in adaptive mode is set by the adaptive parameter Control, as shown in the following figure.



Description of the parameters:

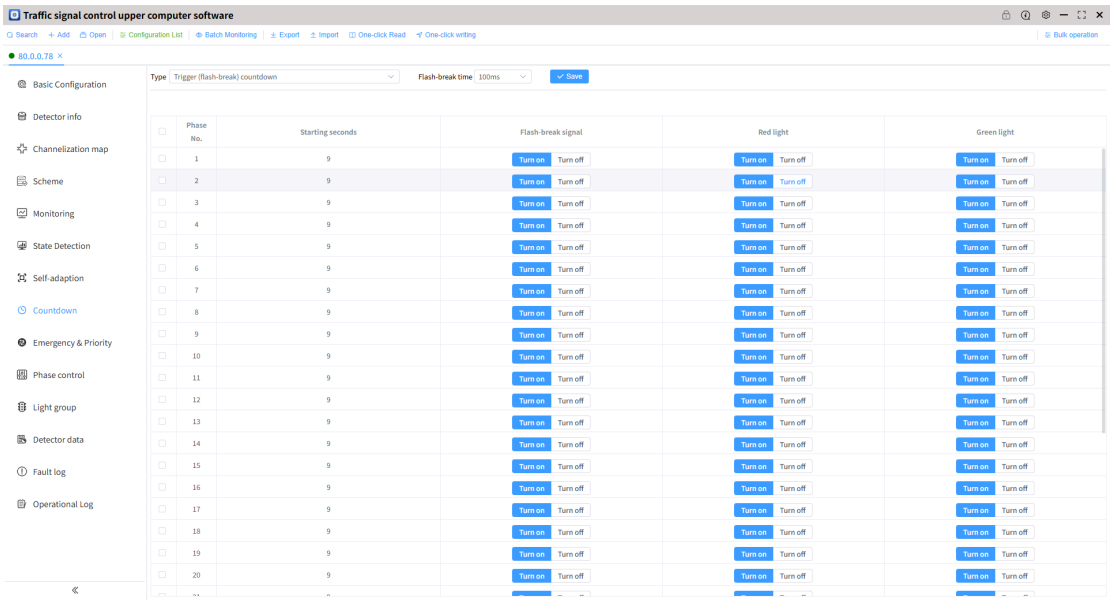
Phase adjustment occupancy range: When the phase usage is lower than the specified value, the phase green indicator duration change range (the phase green indicator decrease time) decreases by the configured percentage. The change takes effect in the next period.

Phase adjustment occupancy range: When the phase usage is greater than the specified value, the phase green indicator duration change range (the phase green indicator increase time) increases by the configured percentage. The value takes effect in the next period.

4.3.8 Countdown

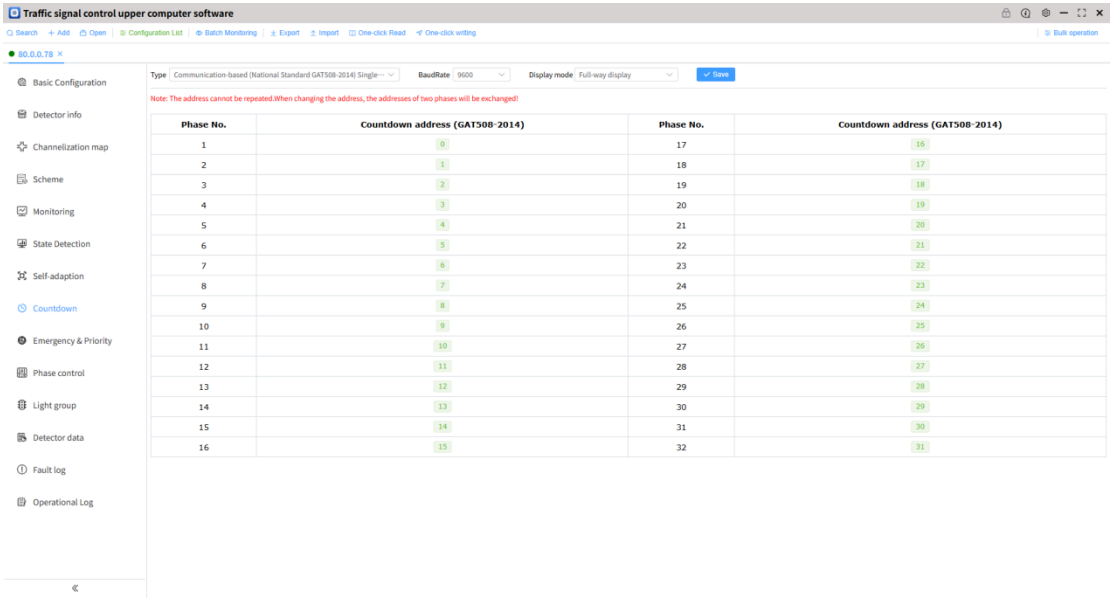
The Traffic Signal Controller supports three types of countdown output. They are learning countdown, communication countdown (RS485), and trigger countdown. The communication countdown supports the countdown output of the GAT508-2014 standard. The default setting is learning countdown.

- The triggered countdown page is displayed as follows:

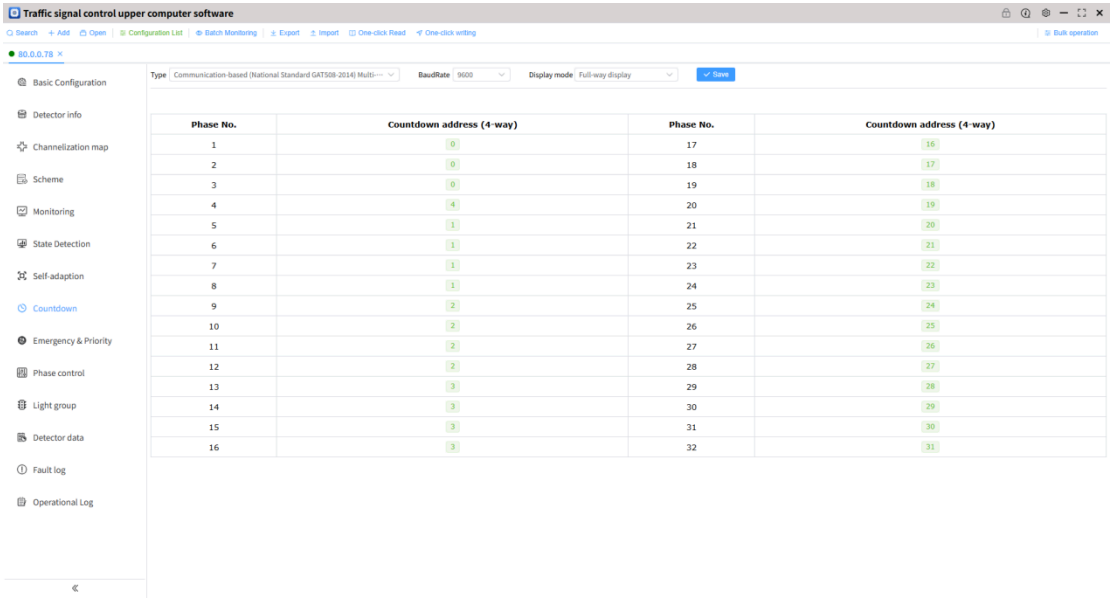


You can set the trigger time, intermittent time, and trigger Traffic Signal Controller Control.

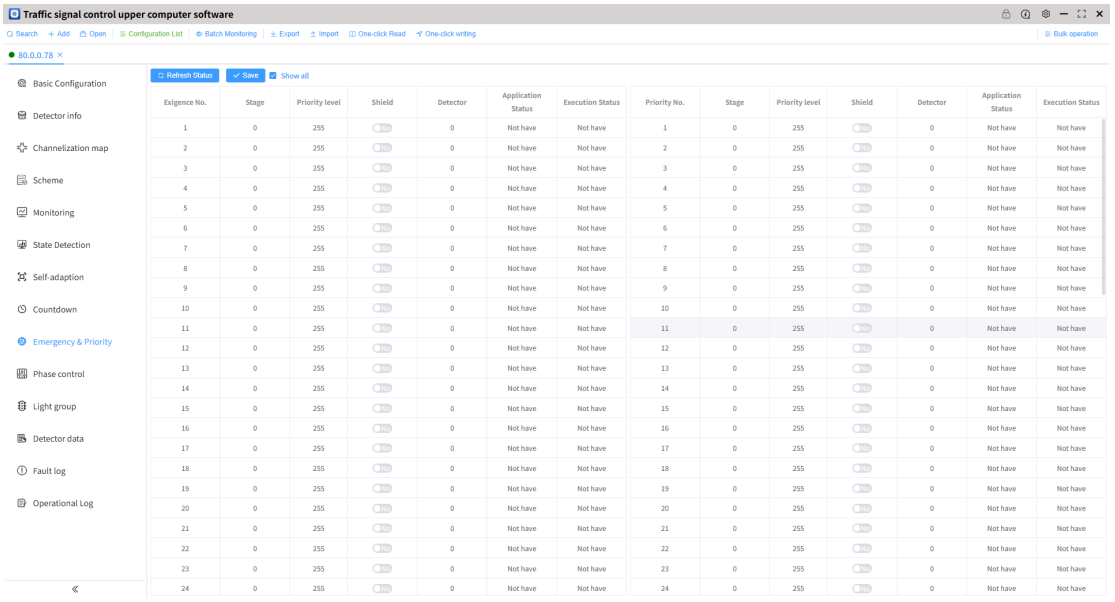
- The single-phase countdown page for communication type (GAT508-2014) is displayed as shown in the figure below:



- The communication type (GAT508-2014) multi-phase countdown page is displayed as shown in the figure below:



4.3.9 Urgent and priority

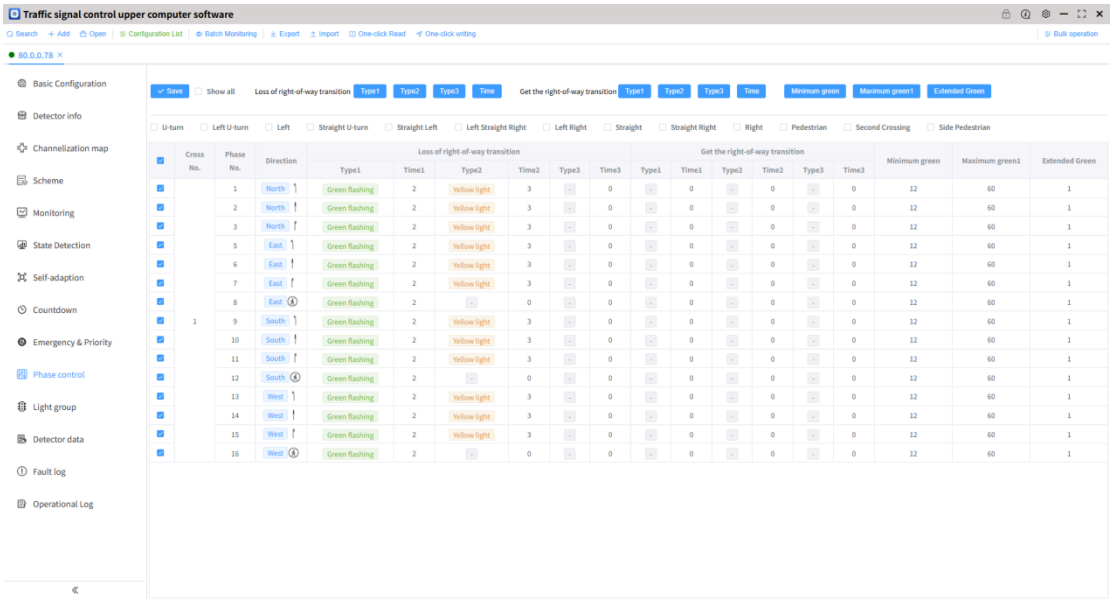


Emergency priority in the configuration phase

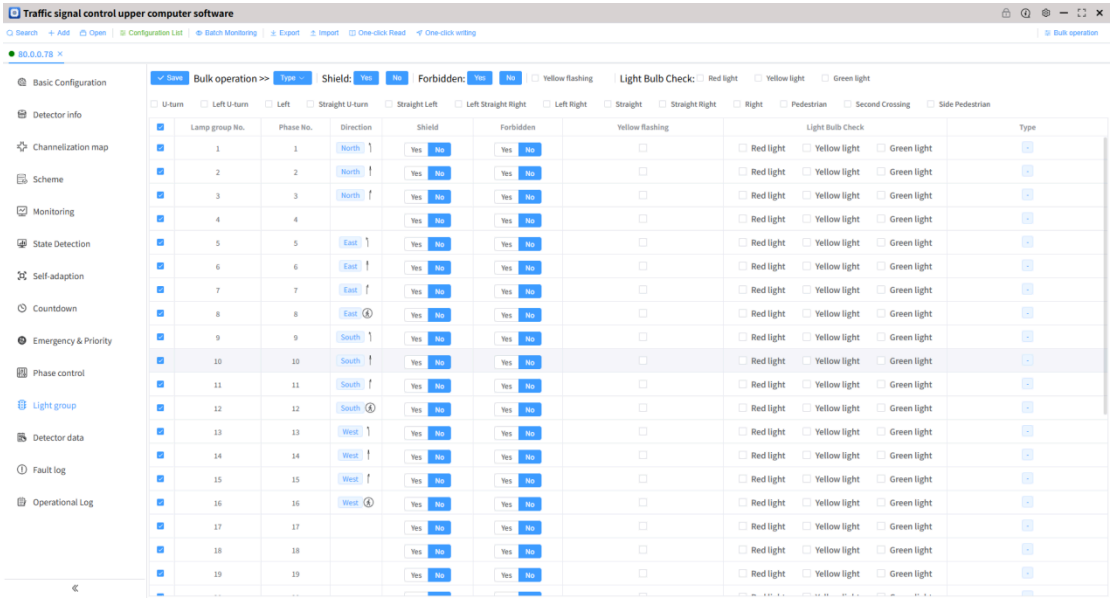
By default, only the configured (phase is not 0) is displayed. Check Show All to display all configurations. Click the corresponding cell to change the value. Save takes effect.

4.3.10 Phase configuration

On the phase configuration page, set the right of way information about the phase. Only the phases that have been configured to the channelization map are displayed. Click the table to make changes. If multiple rows are selected, the modification can be performed in batches.

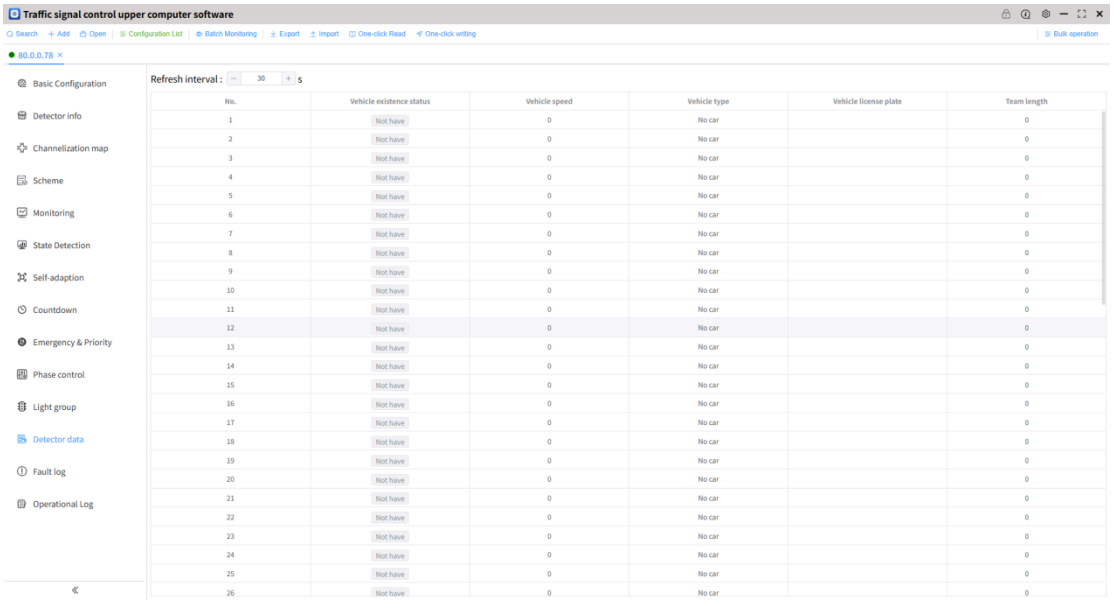


4.11 Lighting Group



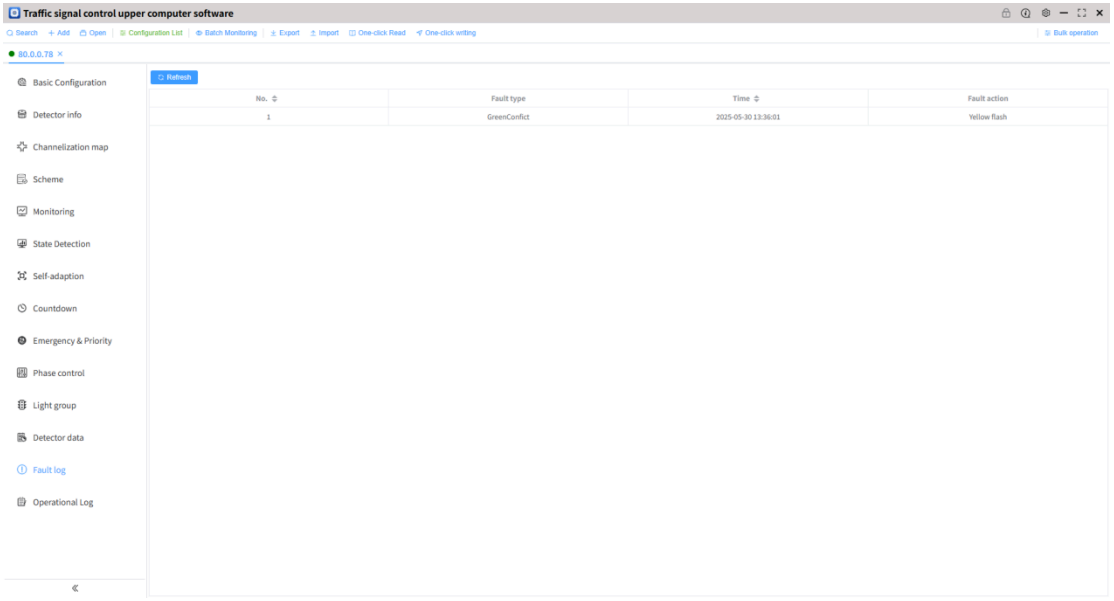
Configure whether to mask the indicator group information (the indicator group is red) or disable (the indicator group is off). Light bulb detection is valid only for 17 Traffic Signal Controller models. After the phase is selected, the phase will always blink yellow.

4.12 Detector data



Read detector data in real time, and set the reading interval.

4.3.13 Failure log



Read the fault information of the Traffic Signal Controller. Currently, there is a small number of fault log parameters. You can directly view the data on the operation log page.

4.3.14 Operation Logs

The operation log displays all the logs related to the Traffic Signal Controller. The following figure shows the detailed information in parameter 2 of the list.