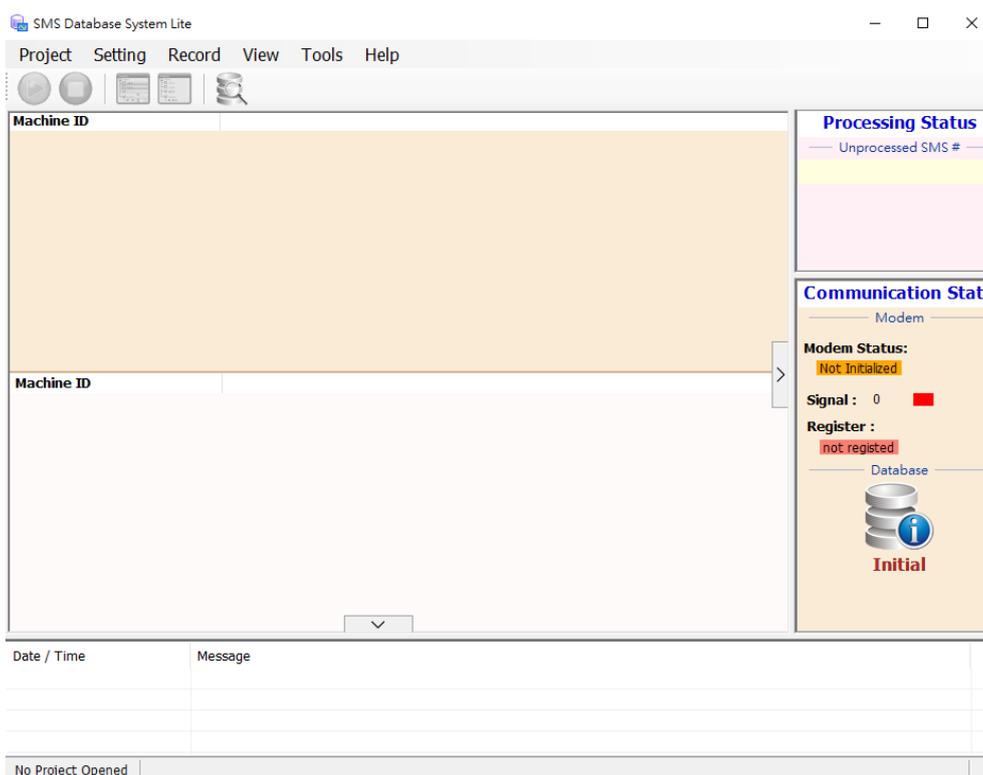




SMS DBS

SMS Database System

User's Manual [Version 2.0]





High Quality, Industrial Data Acquisition, and Control Products

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Email: service@icpdas.com

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1. Product Overview

The purpose of this document is to describe the procedure for using the SMS Database System. The SMS Database System is a software tool provided by ICPDAS that stores SMS messages in database.

Along with hardware provided by ICP DAS : G-4510 · GTP-541M · G-4510 (intelligent SMS transmitter) and GTM-201 · GTM-204M Series (GPRS/ GSM Modem), it allow users to view the text messages sent by the device and make inquiries at the moment or afterwards.

Features:

- Supports MS SQL Server and MS Access 2003 database (or above)
- Provides backup mechanism in local site: when experiencing unexpected disconnection and not able to transmit and store data in remote SQL Server database, the data will be safely kept in local site.
- Allows to view real-time or historical data

2. Before Installation



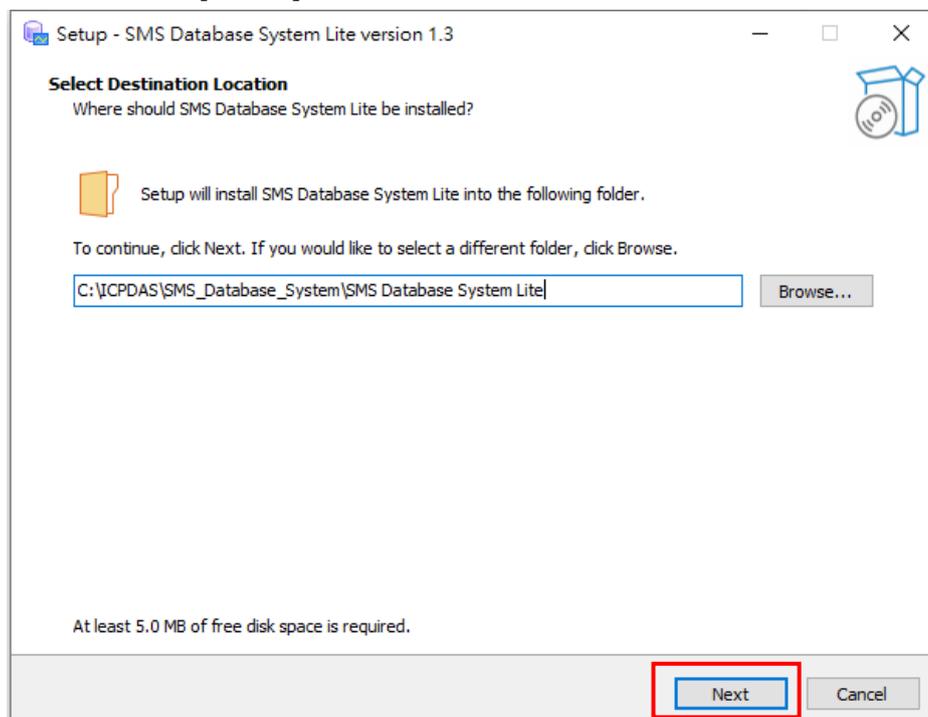
Before performing software installation, please configure GTP-541M/GTM-204M hardware and set up the system (Figure above shows a possible system configuration. For more detail information, please refer to GTP-541M and GTM-204M User Manual.)

※Note : The SMS Database System requires the .NET framework version 2.0 (or above) to be installed on the target computer.

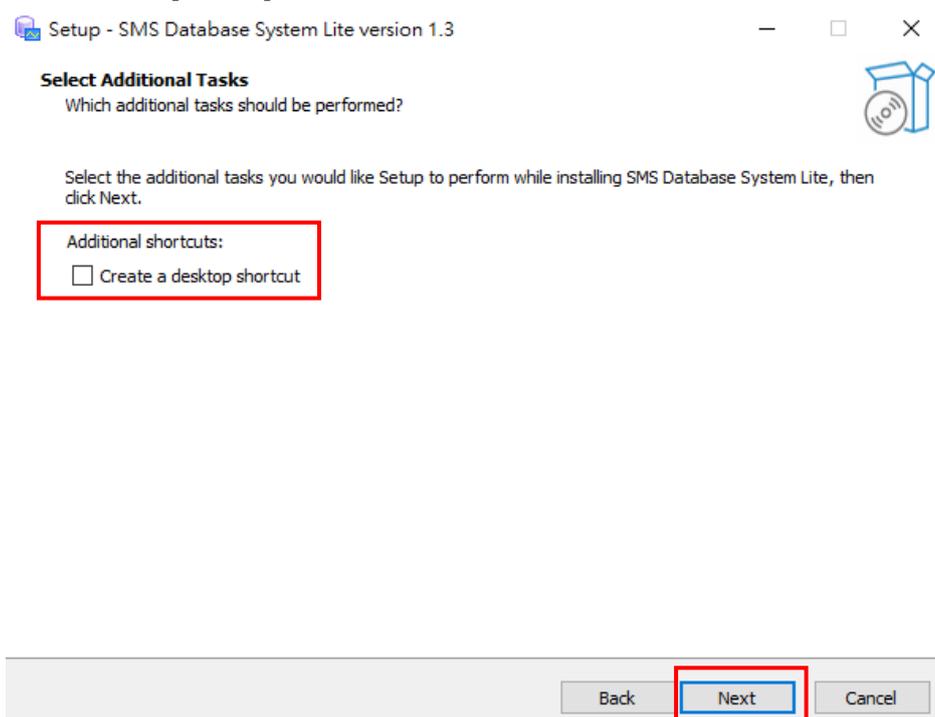
3. Software Installation

Please contact ICPDAS service to obtain the latest version of SMS Database System setup file.

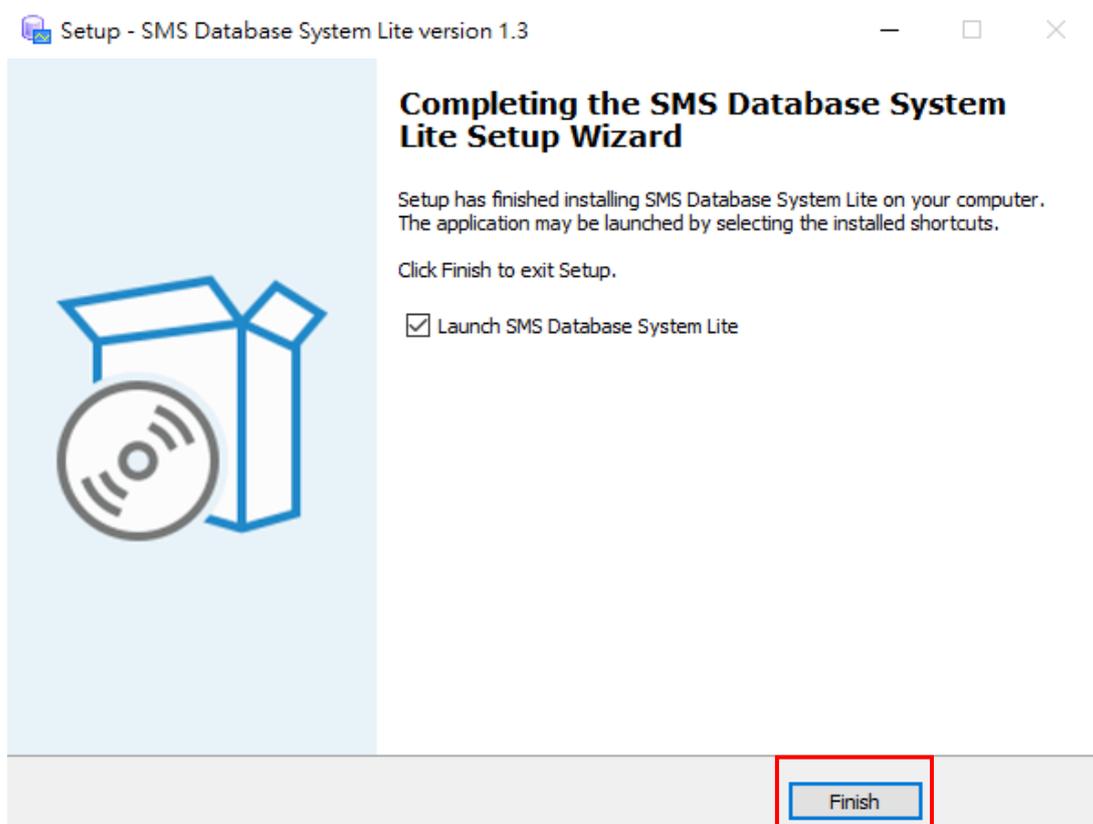
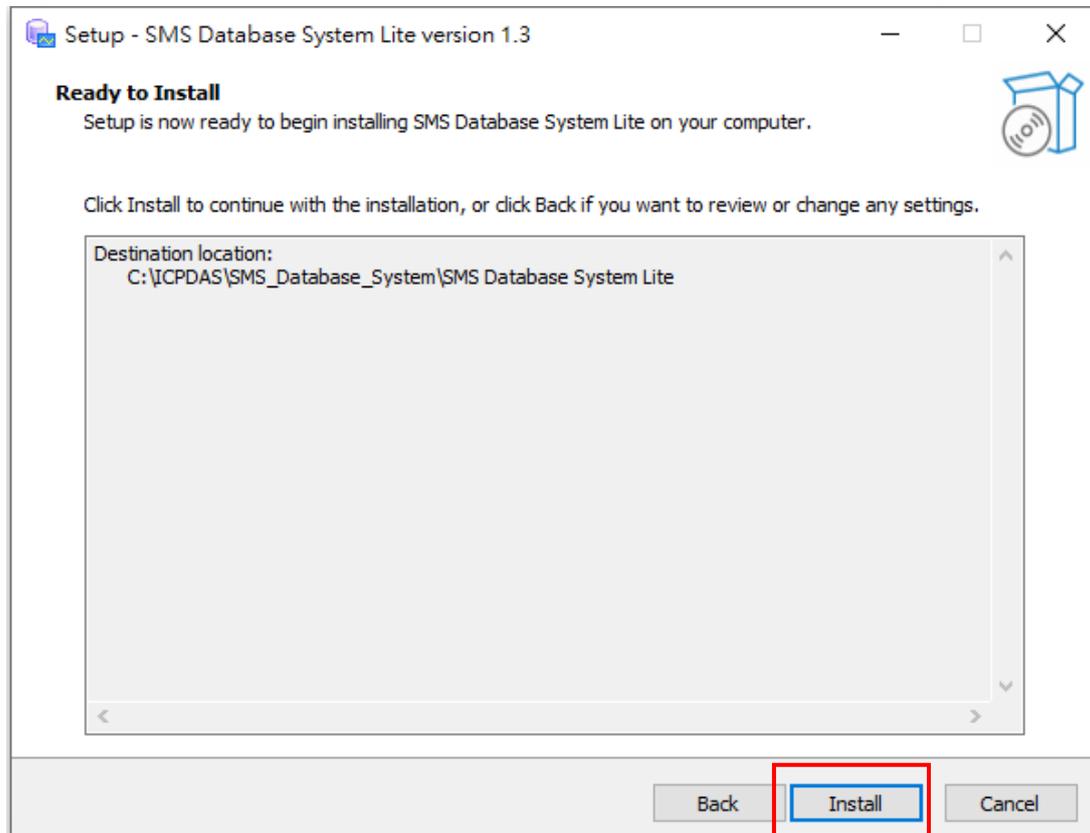
- **Step1:** Please double click [SMS_Database_System_Lite_setup.exe] to start installation, click [Next] to continue.



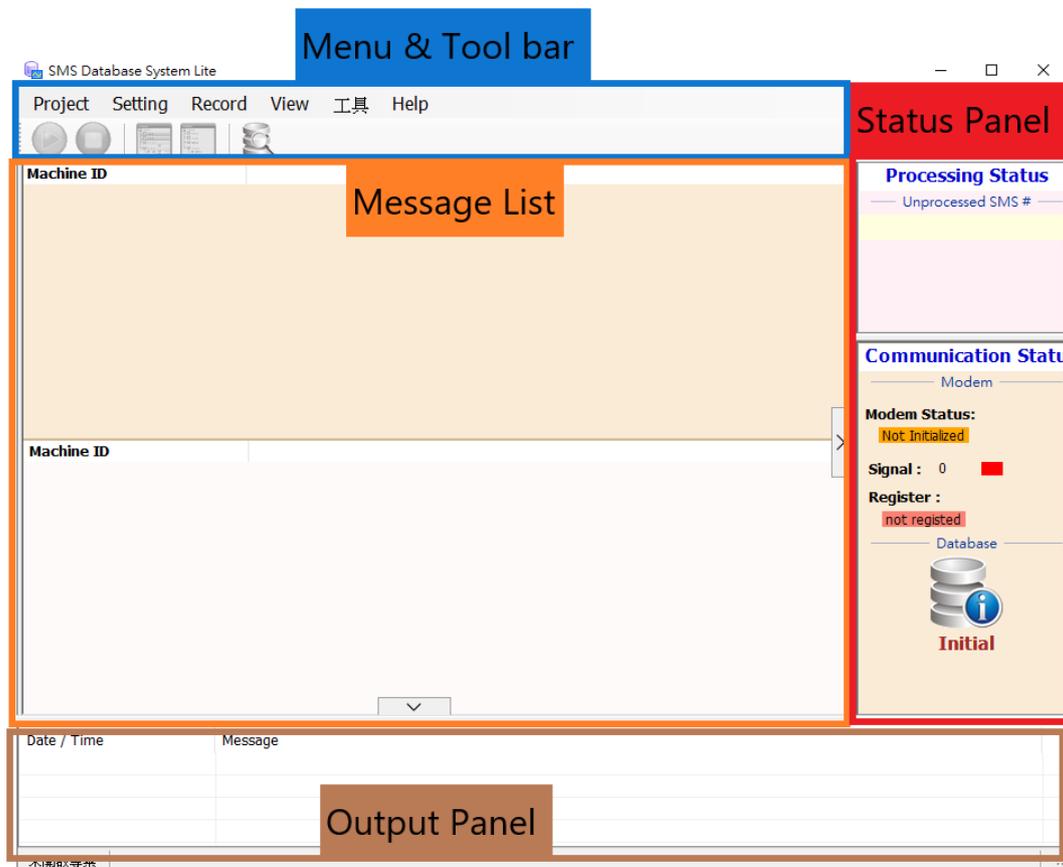
- **Step2:** Check [Create a desktop shortcut] to add the application to the desktop, and then click [Next] ◦



- **Step3:** Click [Install] , and click [Finish] to end the installation.



4. User Interface Introduction



SMS Database System user interface window contains the following areas:

- **Menu & Tool bar** : Contain menus and buttons for easy access to functions.
- **Message List** : Displays list of received messages (include alarm messages and real-time messages periodically sent by remote units).
- **Status Panel** : Shows messages processing status and connection status.
- **Output Panel** : Display information, warning, error messages when program execute.

5. System Operation Procedure

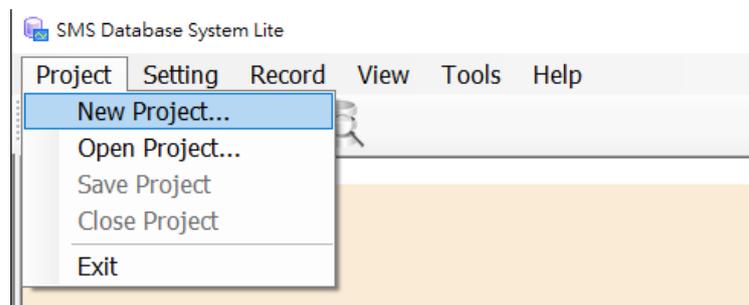
It's easy to build a ready-to-use application on SMS Database System. Follow the steps below to build an application:

1. Create a New Project
2. Com Port Setting
3. Phone Number Setting
4. Database Setting
5. Save SMS Message to Database
6. Display Historical Data

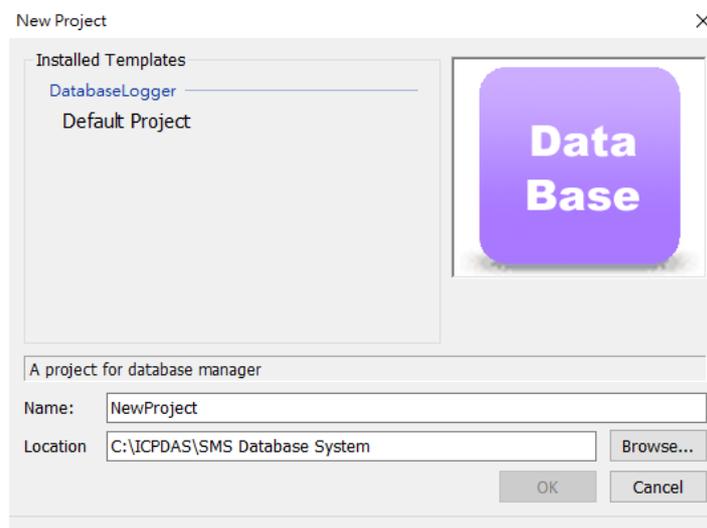
5.1 Create a New Project

Follow the steps below to create a new project:

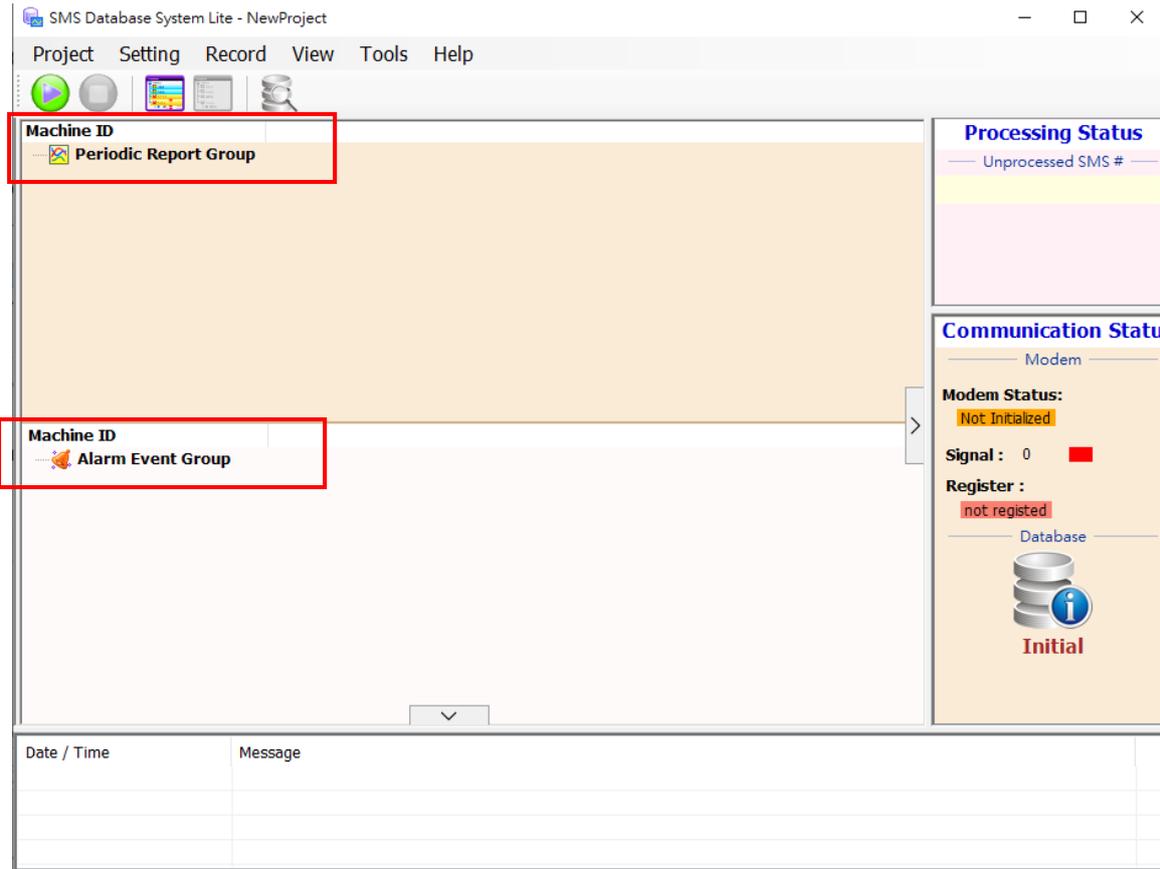
- **Step1:** Select [New Project] from the dropdown list of the [Project] menu, the [New Project] window will pop up.



- **Step2:** Input project name, path or browse through file dialog box to select the destination folder, click [OK] to create a new project.



- **Step3:** After the new project being created, you will find two nodes [Periodic Report Group] and [Alarm Event Group] appear in [Message List].
 - **Periodic Report Group** : Displays recent received periodic SMS message.
 - **Alarm Event Group** : Displays recent received alarm event SMS messages.

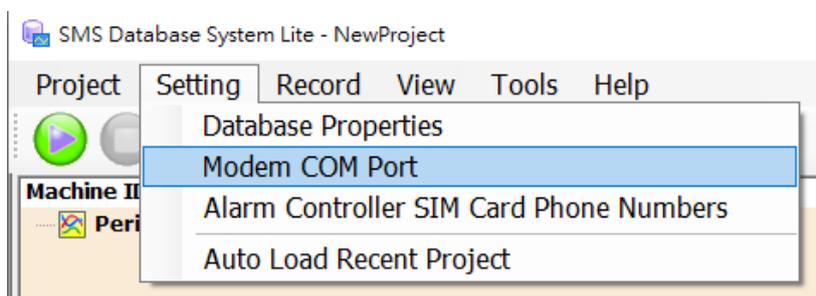


5.2 Com Port Setting

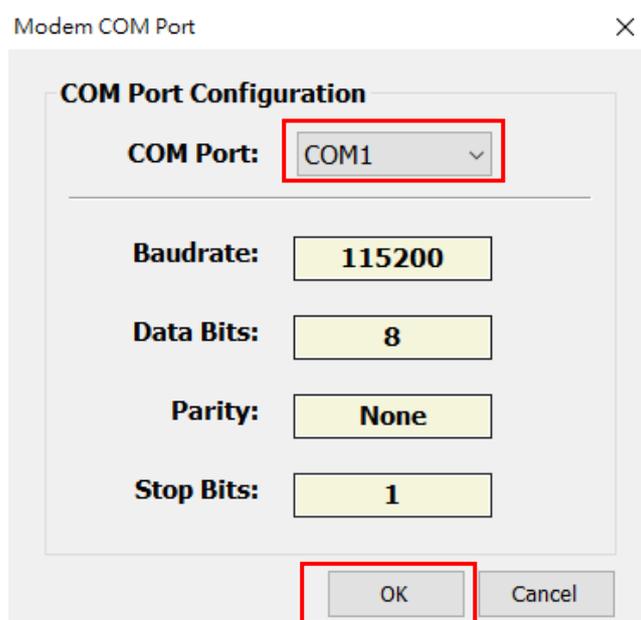
The database system must receive SMS messages from GTP-541, G-4510 via GTM series devices (e.g. GTM-204M, GTM-203M modems), it requires setting up the COM Port parameter for the target computer.

Follow the steps below to set up the COM Port parameter for the target computer:

- **Step1:** Select [Modem COM Port] from the dropdown list of the [Setting] menu, the Modem COM Port window will pop up.



- **Step2:** Select the COM Port to connect to Modem from the dropdown list, click [OK] to finish COM Port setting. For the COM Port number, please refer to the GTM Series User's Manual.

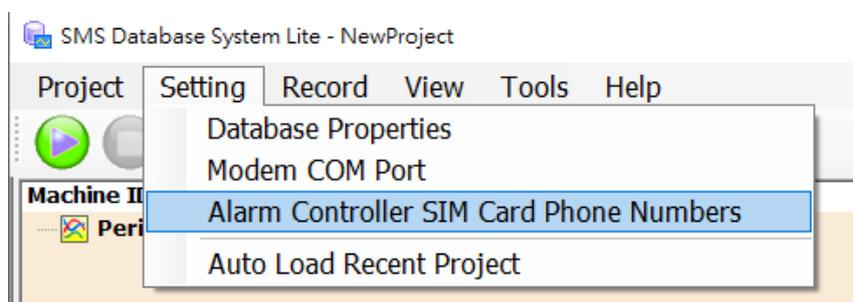


5.3 Phone Number Setting

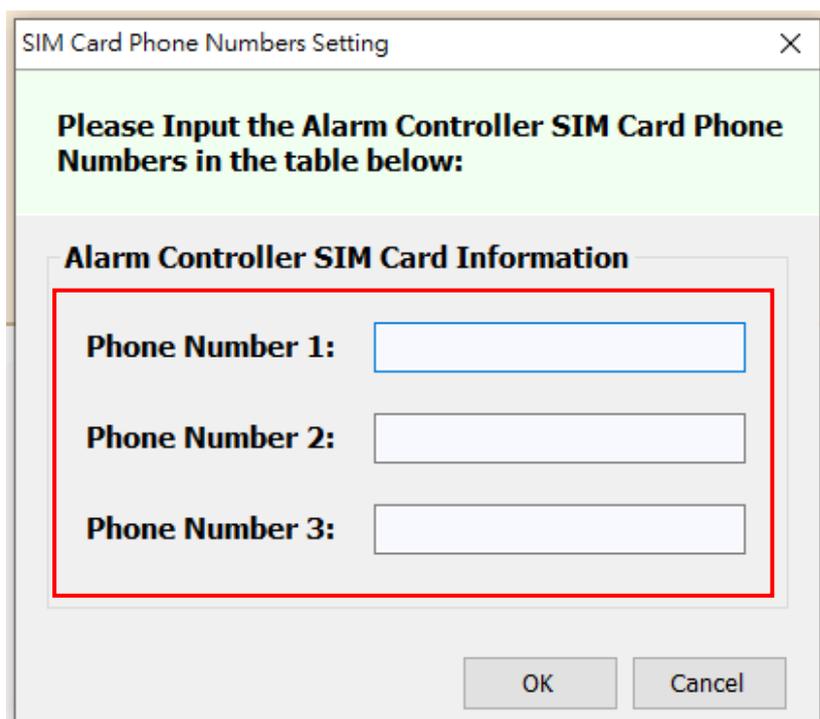
The Phone Number Setting function allows you to receive SMS messages sent by authorized senders only; the filter function will prevent the database from receiving and storing messages from unknown senders.

Follow the steps below to set up filter list:

- **Step1:** Select [Alarm Controller SIM Card Phone Numbers] from the dropdown list of the [Setting] menu.



- **Step2:** The Lite version requires the SIM card phone number of the alarm controller to be set before starting recording.
※Note: For Lite version, the filter list function is limited and allows setting up 3 numbers at most.
- **Lite version :** After entering the phone number, press [OK].

A screenshot of the 'SIM Card Phone Numbers Setting' dialog box. The title bar says 'SIM Card Phone Numbers Setting' with a close button (X). The main text reads: 'Please Input the Alarm Controller SIM Card Phone Numbers in the table below:'. Below this is a section titled 'Alarm Controller SIM Card Information' containing three input fields: 'Phone Number 1:', 'Phone Number 2:', and 'Phone Number 3:'. Each field is empty. At the bottom right are 'OK' and 'Cancel' buttons. A red rectangular box highlights the three input fields.

- **Pro version** : Check the box to enable the phone number filtering function, after entering the phone number, please click [Add] and [OK], if you want to delete the phone number, please enter the phone number to be deleted and then click [Delete].

SIM Card Phone Numbers Setting

Please Input the Alarm Controller SIM Card Phone Numbers in the table below:

1 Enable Phone Numbers Filtering Function

2 Phone Number: 0912345678

3 Add Delete

Phone Number List

OK Cancel

※Note : Please check the output format of the SMS phone number source. This format must match the phone number entered in the settings to avoid errors.

For example, if the sender source will send out the numbers in the format that will include area code or country code, make sure you add these codes to your phone numbers on the list. These codes will not be added to the numbers automatically.

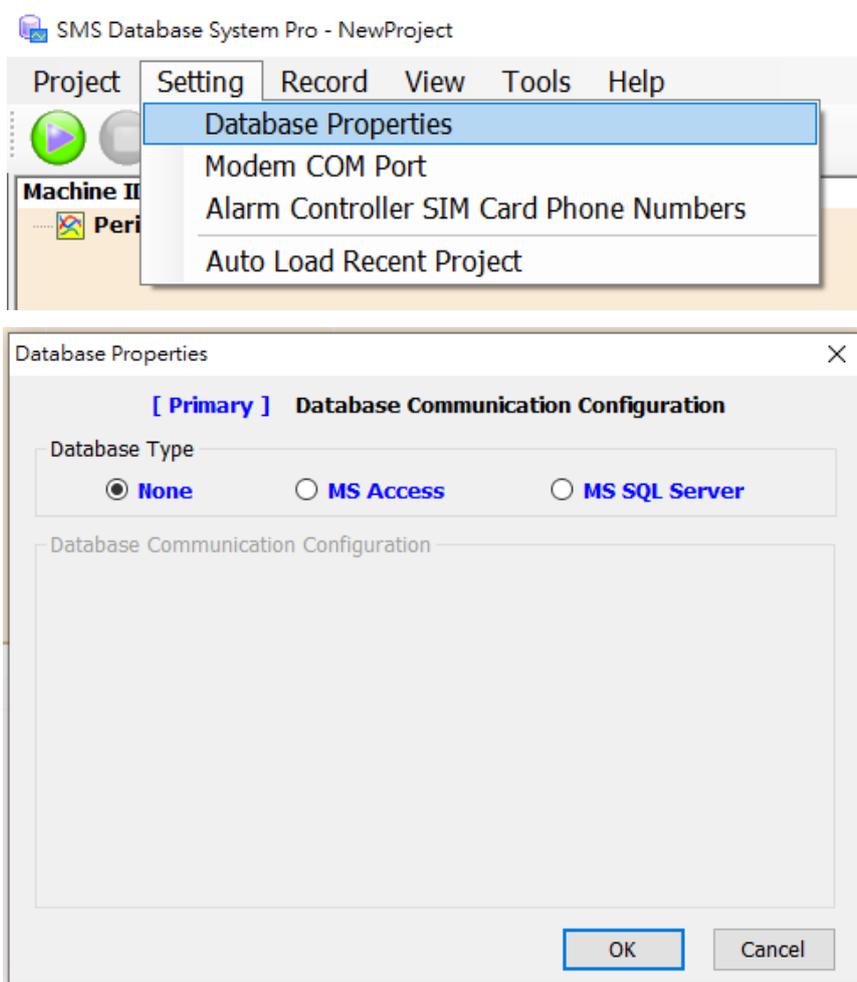
5.4 Database Setting

The SMS messages received by GTM Series Modem from the GTP-541M, G-4510, etc. will be stored in the database. Therefore, it requires setting up the database before starting to transmit messages.

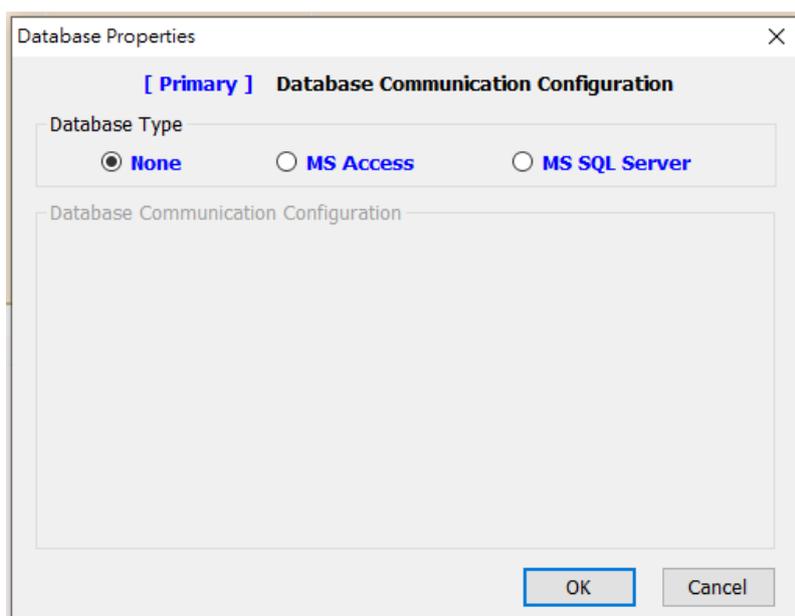
Currently, the system supports MS SQL Server 7.0 (or above) and MS Access 2003(or above).

Follow the steps below to set up database:

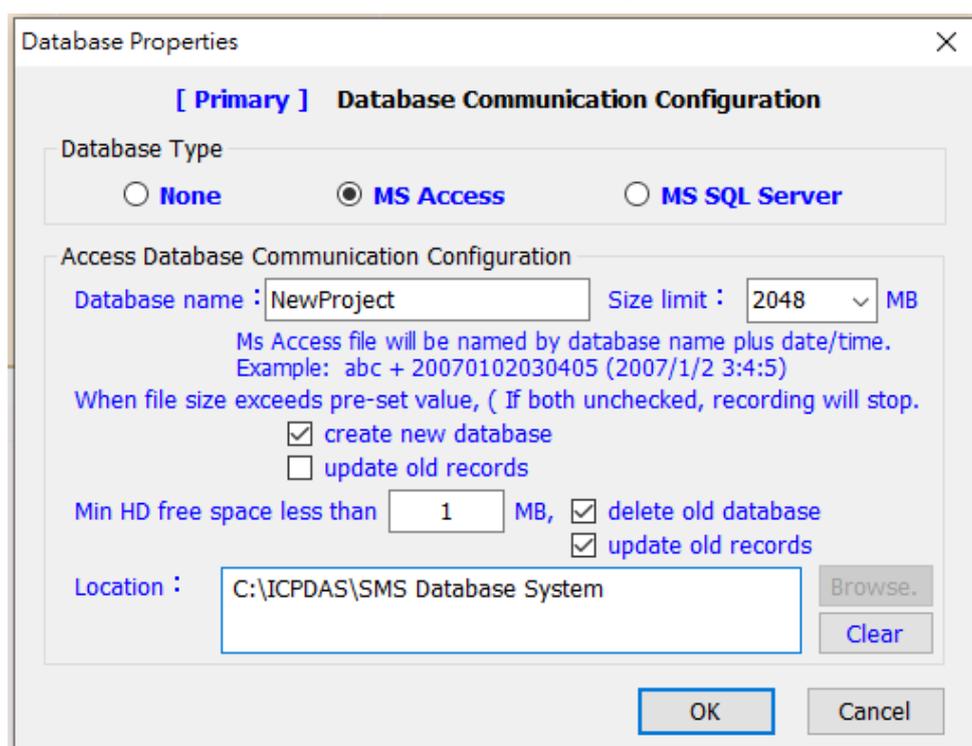
- **Step1:** Select [Database Properties] from the dropdown list of the [Setting] menu.



- **Step2:** There are three database types [None, MS Access, MS SQL Server], and users can set the database attributes according to the required database type. The details of the database settings are as follows:
 - **None :** This setting means that all incoming SMS messages are not saved after the system starts running, but they are still displayed in the SMS report list in real time.



- **MS Access :** Please refer to the following diagram for setting, after setting, an .mdb file will be created to start saving data.



- ◆ **Database name** : Type a name for database. Current date (year, month, day) and time (hour, minute, second) will be automatically pasted to the name you type as the final database name.

For example, you type "abc" as database name, the database creation date and time is "2007/01/02 03:04:05 "(the 24 hours time system), the full database file name saved in system will be:

abc20070102030405.mdb

- ◆ **File Size Limit** : Specify maximum MS Access database file size allowed.

- ◆ **When file size exceeds pre-set value** : The default is to check [create new database].

※Note: If this checkbox is unchecked and no other processing method is selected, the new messages will not be saved in the database when the database size reaches the file limit space.

- **[create new database]** :The system will automatically generate a new database (in the name of original input name pasted current time tag) to store new incoming SMS messages.

- **[update old records]** : Once the file size reaches the specified limit, the oldest data will be deleted to release space for storing latest received SMS messages.

- ◆ **When the hard disk space is insufficient** : Specify minimum [free disk space] allowed. You can also specify which policy to apply when reaches minimum [free disk space]. Two policies are available:

※Note: If both policies are selected, [Delete Old Database] has higher priority and will be executed first.

- **[delete old database]** : If [Delete Old Database] is checked, the oldest database file will be deleted

- **[update old records]** : If [Update Old Records] is checked, the oldest data will be deleted to release space for storing latest received SMS messages in current database.

- ◆ **Location** : specify database storage location.

- **MS SQL Server** : Please refer to the following diagram for setting, after setting, you will be connected to the database to start saving data.

The screenshot shows a 'Database Properties' dialog box with two sections: '[Primary] Database Communication Configuration' and '[Backup] Database Communication Configuration'. The Primary section is active and shows the following fields: Database Type (MS SQL Server selected), SQL Database Communication Configuration (Database name: sms_dbs, IP Address: 127.0.0.1, Port Number: 1433, User Name: sa, Password: masked), and a Verify DB button. The Backup section is inactive and shows Database Type (None selected).

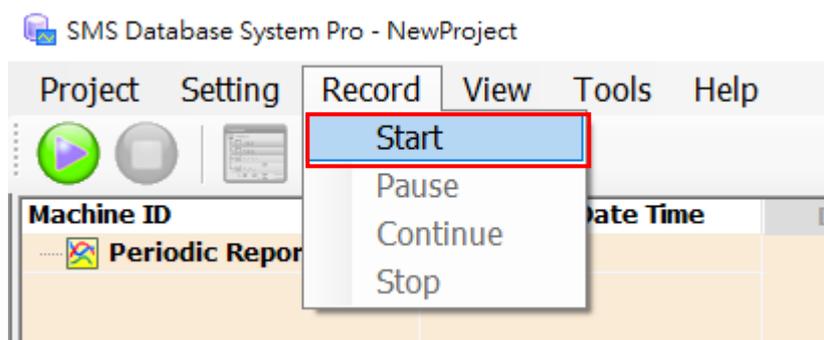
- **Database name** : Input the name of the remote database and specify the database where you want to store the SMS messages.
- **IP Address** : Input the IP Address of the remote database server.
- **User name** : Input the login name to login remote database server.
- **Password** : Input the password to login remote database server.
- **Backup database** : Specify backup database for storing SMS messages when experiencing unexpected disconnection and lost connection to remote database server. Input backup database name, IP Address, login name, password of the backup database.

5.5 Save SMS Messages to Database

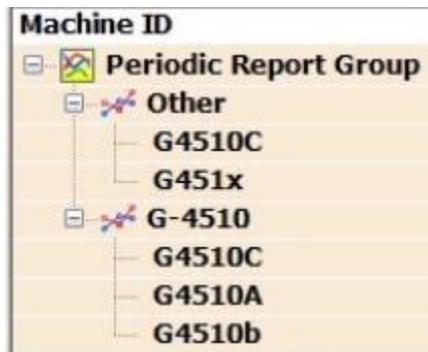
After finishing database settings, now you can connect to database and start to save SMS messages received in the database.

Follow the steps below to save SMS messages to database:

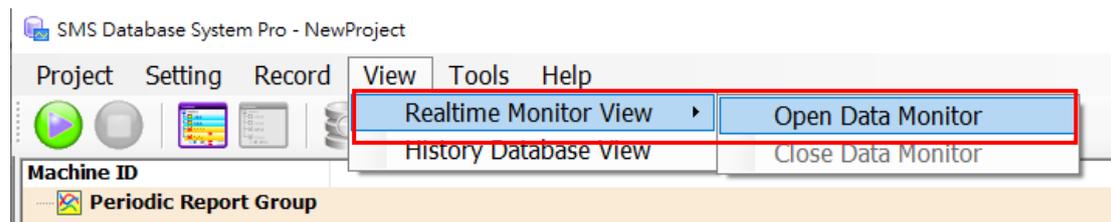
- **Step1:** Select [Start] from the dropdown list of the [Record] menu or click  button .



- **Step2:** If receives SMS messages, the Machine ID of the received messages will be listed on [Message List] panel under the category it belongs to.



- **Step3:** Select [View] > [Real-time Monitor View] > [Open Data Monitor] or click the  button, the detail information of each SMS message received will be listed on the [Message List] panel.



➤ **Periodic Report Group** : Detailed description is as follows

The left side will display the latest IO status report message received, and the right side will display the IO status of the message you clicked, and you can switch to view it, DI and DO are indicated by ON [●] / OFF [●], AI/AO/Counter are indicated by numerical values.

| Machine ID | Report Date Time | DI | DO | AI | AO | COUNTER |
|-----------------------|---------------------|----|----|----|----|---------|
| Periodic Report Group | | 0 | 1 | 2 | | 3 |
| Other | | | | | | |
| G4510C | 2022/08/04 14:18:00 | 0 | 0 | 0 | | |
| G451x | 2022/05/13 13:57:00 | 4 | 5 | 6 | | 7 |
| G-4510 | | | | | | |
| G4510C | 2022/08/04 14:10:00 | | | | | |
| G4510A | 2022/08/04 14:08:00 | | | | | |
| G4510b | 2022/08/04 14:07:01 | 8 | 9 | 10 | | 11 |
| | | | | | | |
| | | 12 | 13 | 14 | | 15 |
| | | | | | | |

Double-click the message on the left and a window will pop up showing all the IO status of the message.

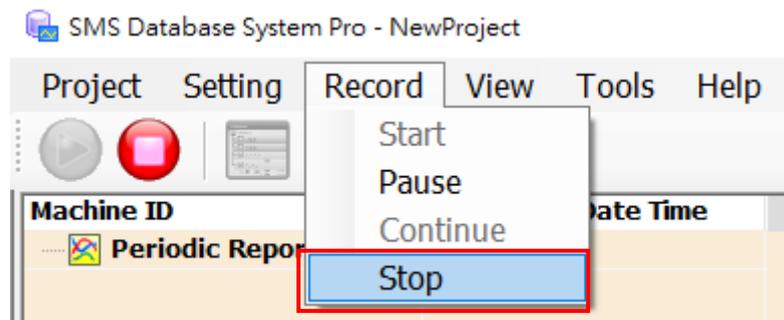
| Machine ID | Report Date Time | DI | DO | AI | AO | COUNTER |
|------------|---------------------|--------|--------|--------|--------|---------|
| G4510 | 2022/07/15 11:20:01 | | | | | |
| G451x | 2022/07/15 11:14:01 | 0.1963 | 0.1133 | 0.1133 | 0.1133 | 0.1133 |

| CRPT DEMO | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|----|----|----|----|----|
| Machine ID | DI | ● | ● | ● | | | | | | | | | | | | | |
| | | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| Machine ID | DO | ● | ● | ● | | | | | | | | | | | | | |
| | | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| Auto_Report | AI | 0.1280 | 0.1621 | 0.1280 | 0.1280 | 0.1280 | 0.1280 | 0.1280 | 0.1280 | 0.1426 | | | | | | | |
| | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | | | | | | | |
| Date / Time | AO | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | |
| | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | | | | | | | |
| Counter | Counter | 0 | 0 | 0 | | | | | | | | | | | | | |
| | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | | | | | | | |

- **Alarm Event Group** : List the latest alert messages received.

| Machine ID | Report Date Time | Alarm Message |
|-------------------|---------------------|---------------|
| Alarm Event Group | | |
| G-4510 | | |
| G451D | 2022/08/02 09:22:52 | Alatm_test |
| G451C | 2022/08/02 09:21:59 | Alatm_test |
| G451A | 2022/08/02 09:19:49 | Alatm_test |
| G451A | 2022/08/02 09:18:45 | Alatm_test |
| G451B | 2022/08/01 18:25:43 | Alatm_test |

- **Step4:** To stop saving SMS messages to the database, select [Stop] from the dropdown list of the [Record] menu, or click  button.



5.6 Display historical data

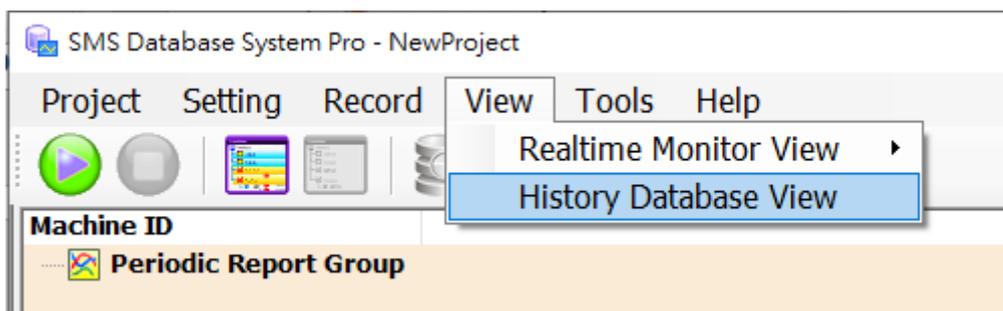
Preview of SMS data recorded in the MS Access database, which can be displayed on

the history table according to the set criteria.

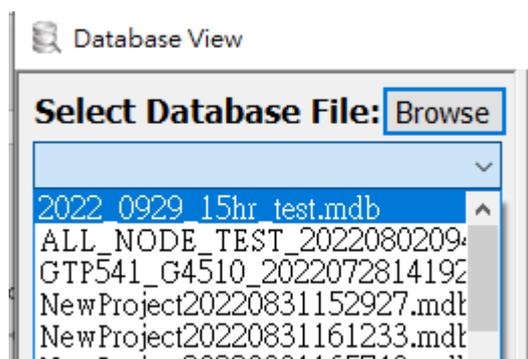
※Note: This feature is only available when using MS Access database, MS SQL cannot be displayed.

Follow the steps below to display historical data:

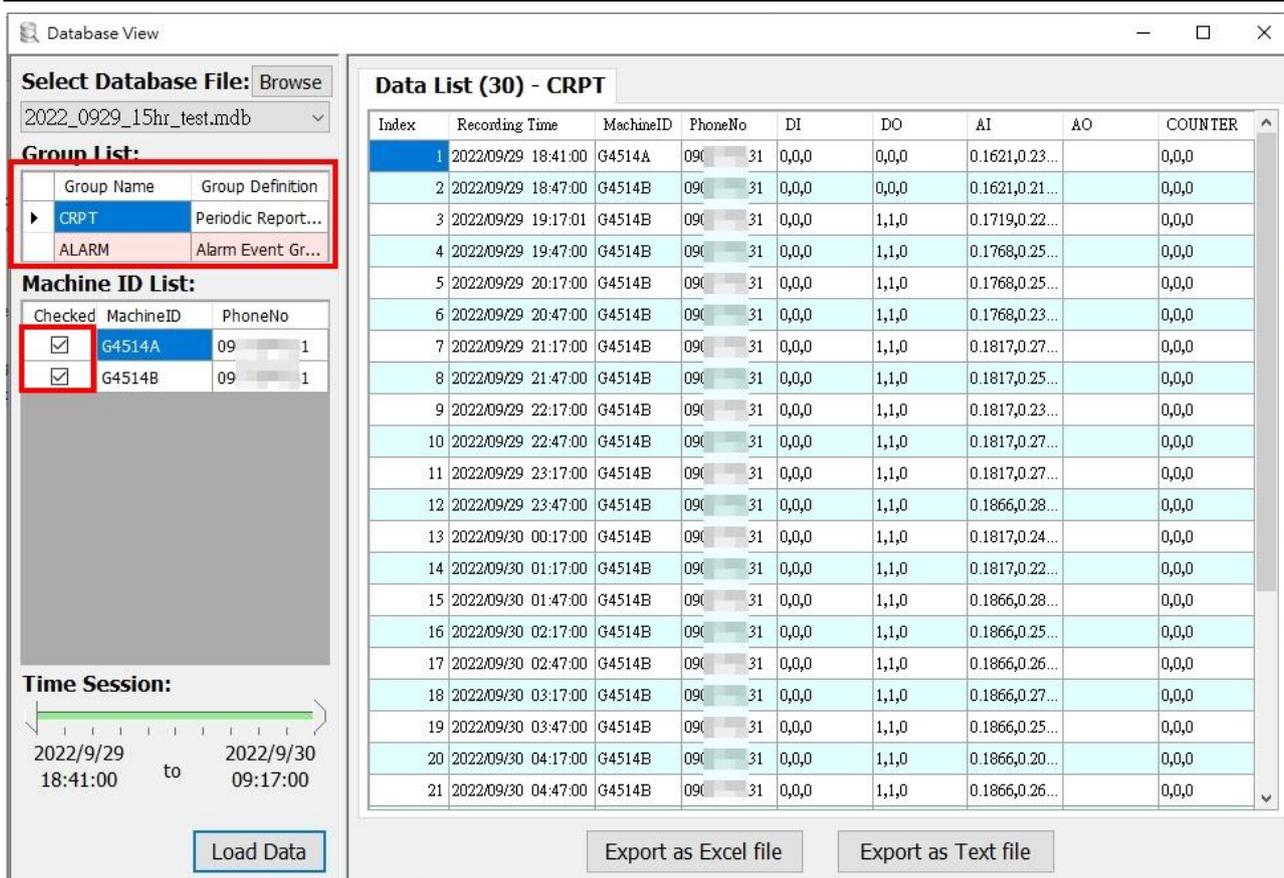
- **Step1:** Select [History Database View] in the [View] menu or press the button.



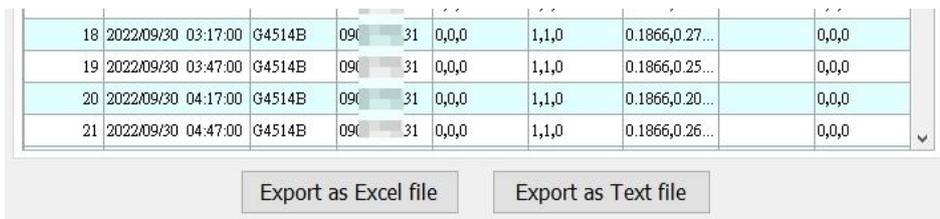
- **Step2:** Click [Browse] and select the MS Access database file you want to browse.



- **Step3:** When the database file is opened, the list of information groups of the database will be displayed CRPT (timed reports) and ALARM (event reports) in the left side panel.
- **Step4:** Click on a message group to display the Machine ID and received time of all messages in the message group. Please check the left panel Machine ID for the message you want to display.
- **Step5:** Select [Time Session] and click the [Load Data] button to load the historical data, as shown below



- **Step6:** Users can click the Export function button to export the filtered history to Excel or Text file format.



6. Revision History

| Revision | Date | Author | Description |
|----------|------------|--------|---------------|
| 2.0 | 2022/10/12 | Patty | First Release |