

SAMSUNG

S- NET pro

**Samsung
commercial A/C
installation toolkit**

User Manual

Version 1.2



2010 - 2011 by Samsung Electronics

Table of Contents

| | |
|---|-----------|
| Part I Introduction | 6 |
|1..About S- NET pro | 6 |
|2..Release History | 6 |
|3..How to Install S- NET pro | 9 |
|Prerequisite and System Requirements | 9 |
|Installing S- NET pro | 11 |
|4..The User Interface..... | 13 |
| Part II Basic Functions | 18 |
|1 ..Options..... | 18 |
|2..Starting Communication..... | 25 |
|3 ..Controlling Indoor Units..... | 27 |
|4 ..Customizing View Layout..... | 29 |
|5..Data Backup..... | 31 |
|6..Making Test Run Report..... | 32 |
|7 ..Trend Graph Monitoring..... | 34 |
|8 ..Replaying a Record File | 38 |
| Part III Add- On Functions | 42 |
|1 ..Raw Data Analyzer..... | 42 |
|2 ..Tracking Info..... | 43 |
|3 ..Abnormal Data Backup | 45 |
|4 ..EEPROM Writing..... | 46 |
|5..Indoor Option Writing..... | 48 |
|6 ..Refrigerant Detecting..... | 51 |
|7 ..Viewing Auto Inspection Result..... | 53 |
| | 0 |

Part



1 Introduction

1.1 About S-NET pro



'S-NET pro' is a software tool for installation and diagnosis of commercial air-conditioner provided by Samsung Electronics. Using this program, you can easily diagnose and inspect commercial air-conditions in every types we provide.

This program has been developed on entirely new approach and improved in many features giving contrast to S-NET 1+. This also supports all air conditioners which S-NET 1+ supported. Previous S-NET 1+ users including installation engineers and technical support centers, product distributors are welcome to new 'S-NET pro', and please take the latest support of Samsung commercial air-conditioners.

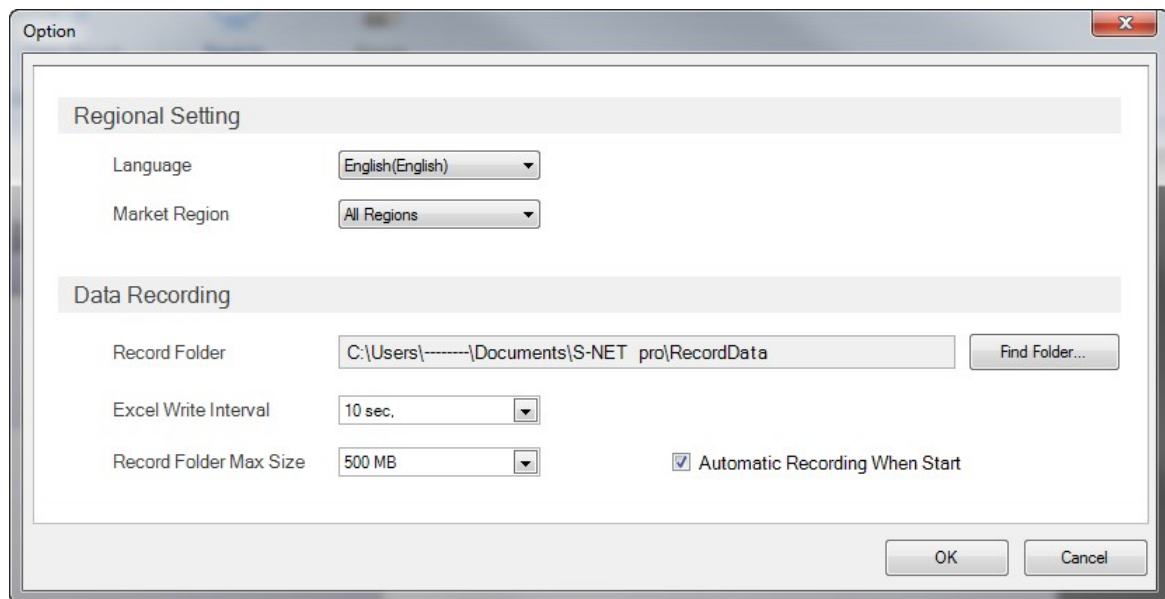
1.2 Release History

Version 1.3.0

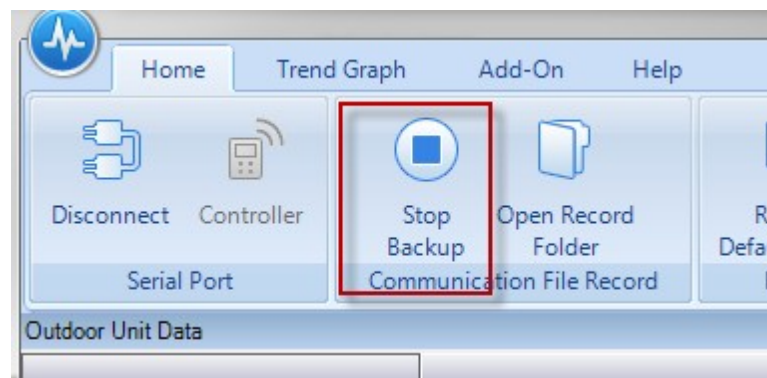
This is a major upgrade after 1.2.x version. We upgraded 2 major and more than 20 minor features. We plan to upgrade S-NET pro continuously focused on easy of use that users in various environments use it more easily.

1. Excel file export.

We have removed "Grid Export" menu and re-developed by the concept of automation. Whenever you connect to A/C, S-NET pro records excel files without any user configuration. See [Basic Function] - [Options], [Data Backup] sections for more detail.



Data Recording Option



Recording On/Off

| A1 | | Time | | | | | | | | | | | | | | | | |
|----|----------|-------|-------|-------|-----|------|--------------|--------------|--------------|---------|------|------|------|----------|----------|----------|---------------|---------|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
| | Time | Comp1 | Comp2 | Comp3 | PWM | 4Way | Oil Balance1 | Oil Balance2 | Oil Balance3 | Hot Gas | CCM1 | CCM2 | CCM3 | EWI SOL1 | EWI SOL2 | EWI SOL3 | Liquid Bypass | Oil Gas |
| 1 | | | | | | | | | | | | | | | | | | |
| 2 | 09:29:09 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 3 | 09:29:19 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 4 | 09:29:29 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 5 | 09:29:39 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 6 | 09:29:52 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 7 | 09:29:59 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 8 | 09:30:09 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 9 | 09:30:20 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 10 | 09:30:29 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 11 | 09:30:40 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 12 | 09:30:50 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 13 | 09:31:00 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 14 | 09:31:10 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 15 | 09:31:20 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 16 | 09:31:30 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 17 | 09:31:40 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 18 | 09:31:50 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 19 | 09:32:00 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 20 | 09:32:10 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| 21 | 09:32:20 | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |

Example of excel record

2. Global 4 Way option writing.

Option reading and refreshing is automated and you can write options by option save file (*.src). See [Add-On Functions] - [Indoor Option Writing] section.

Indoor Option Writer

☐ Select All

| Addr... | Model | Product Code | Installation Code | Micom Version | DB-Code |
|--|-------|-----------------------------|-----------------------------|---------------|---------|
| <input checked="" type="checkbox"/> 01 | 1WAY | 014077-157239-276470-370040 | 020000-100000-200000-300000 | - | - |
| <input checked="" type="checkbox"/> 02 | 1WAY | 014077-157239-276470-370040 | 020000-100000-200000-300000 | - | - |
| <input type="checkbox"/> 03 | 1WAY | Not supported indoor unit | or network error occurred. | 09-02-00 R.01 | 00696C |

[Option Code]

Product Code 0 -- 1 -- 2 -- 3

Installation Code -- 1 -- 2 -- 3

Open Option File Option Code Writing

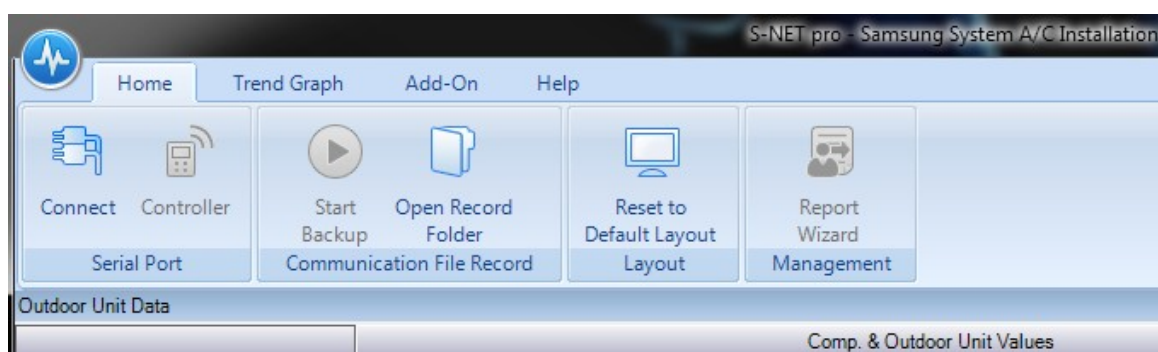
Check List

- 1) Please remove or power off the interface module if connected.
- 2) Currently, only Global 4 Way indoor unit is supported for option writing.
- 3) Proper COM port should be selected in [Select Port] in main menu.
- 4) Communication between outdoor unit and indoors should be OK.

Close

3. Toolbars and menu

It is simplified as follow. File Recording and controller are moved to [Home] tab and installation information is removed. Installation information will be requested when the user generates a installation report.



* Release history information starts from ver1.3.0. Previous version history would be opened on request.

1.3 How to Install S-NET pro

S-NET pro is a software that runs on Microsoft Windows operating system. To install S-NET pro, you have to log on by administrator authority. Microsoft .NET framework also should be installed. For more detail instructions, please read subsections.

1.3.1 Prerequisite and System Requirements

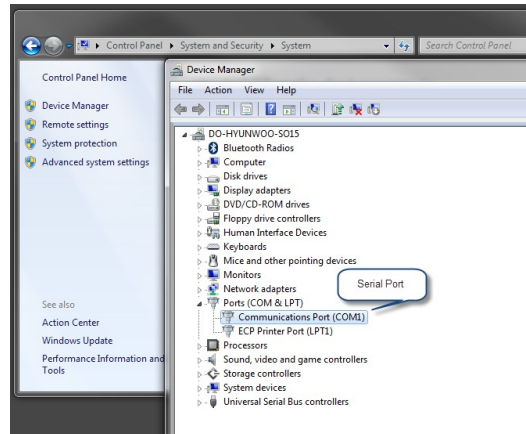
Table of requirements

| | |
|------------------|--|
| Operating System | Microsoft Windows XP or above. Not compatible with Windows Server OS |
| Hardware | 1 serial port(USB - Serial converter is also available) |
| Software | Microsoft .NET framework 2.0 or above |

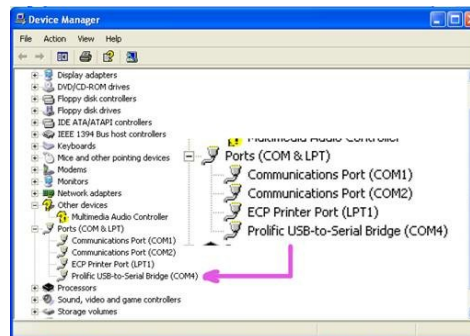
Checking serial ports

Make sure that the PC has more than one serial port. You can check in [Control Panel] - [System] - [Device Manager]; Detail path is different by OS version. When using a USB-serial converter, be sure to check whether the device driver is properly installed. Whenever you plug the converter to another USB port, the COM port number might be changed.

If two or more serial ports are installed, confirm the port that is connected to RS232-485 converter.



Windows 7

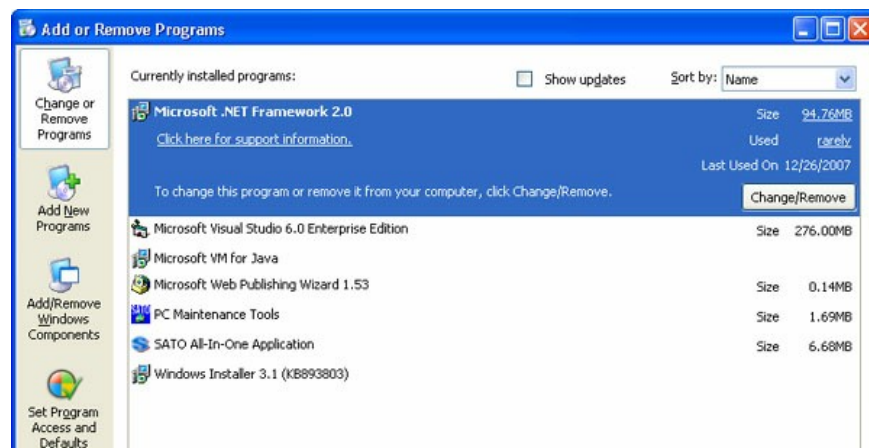


Windows XP

.NET Framework

S-NET pro needs Microsoft .NET Framework 2.0 or above version. If it is absent, you have to install it prior to S-NET pro installing. As Microsoft Windows Vista or above, including Windows 7 has built in .NET Framework, you don't need to care .NET Framework in this latest OS versions.

If it is Windows XP, check [Control Panel] - [Add or Remove Programs]. It should have Microsoft .NET Framework 2.0 or above as the picture below.



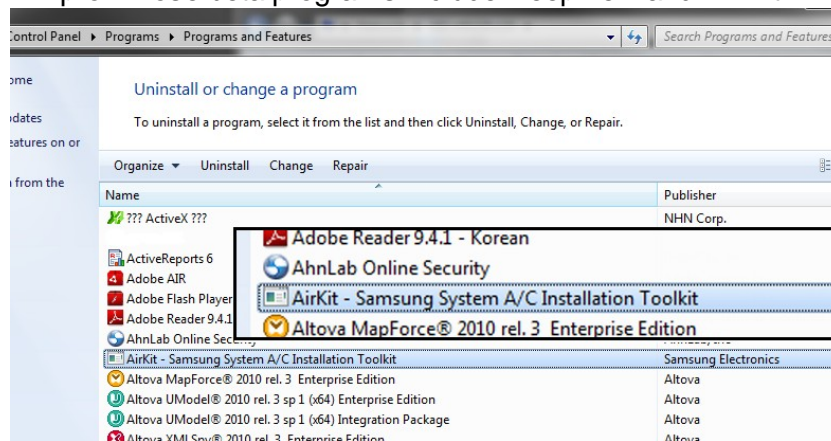
If it is absent, install the program from this web link.

<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=9CFB2D51-5FF4-4491-B0E5-B386F32C0992>

1.3.2 Installing S-NET pro

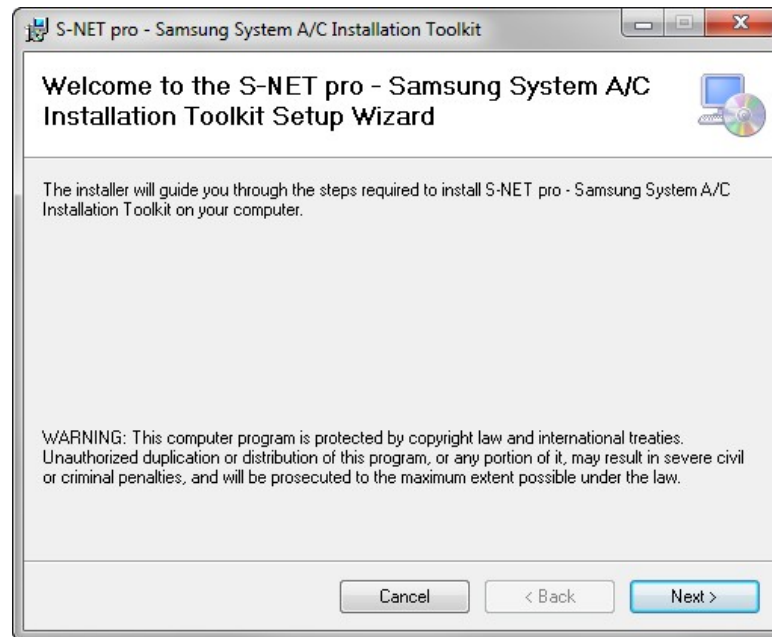
Deleting existing beta toolkits.

If the system has been installed an unofficial beta toolkit, you have to uninstall it before installing S-NET pro. Those beta programs include DeepView and Air-Kit.

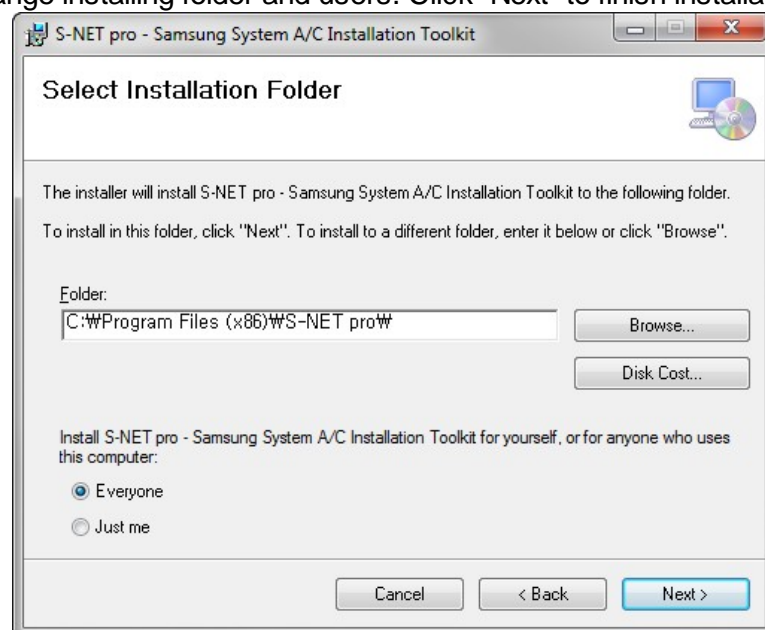


Installing S-NET pro

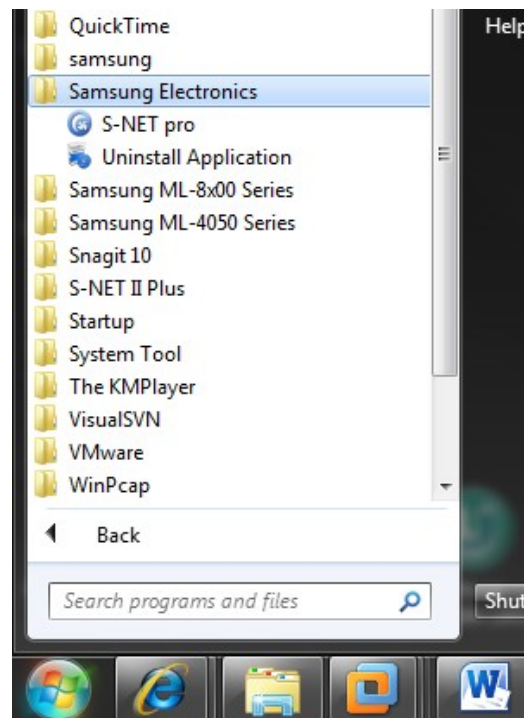
1. Double click setup file(S-NET_pro_v1.1.x.msi) to launch setup process.
2. Read instructions and click "Next" button.



3. You can change installing folder and users. Click "Next" to finish installation

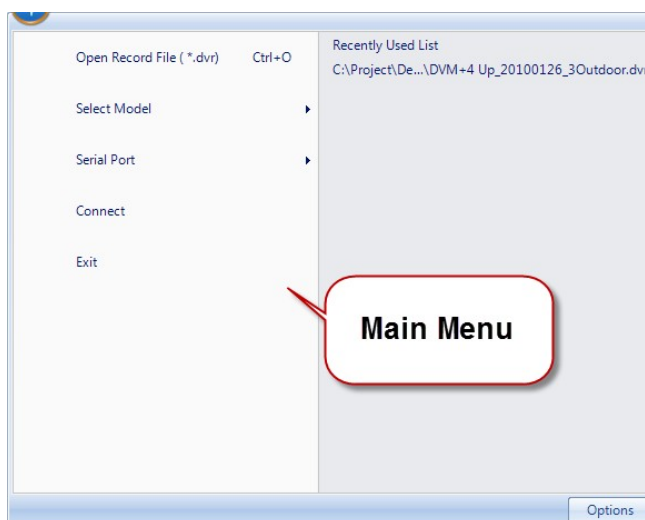
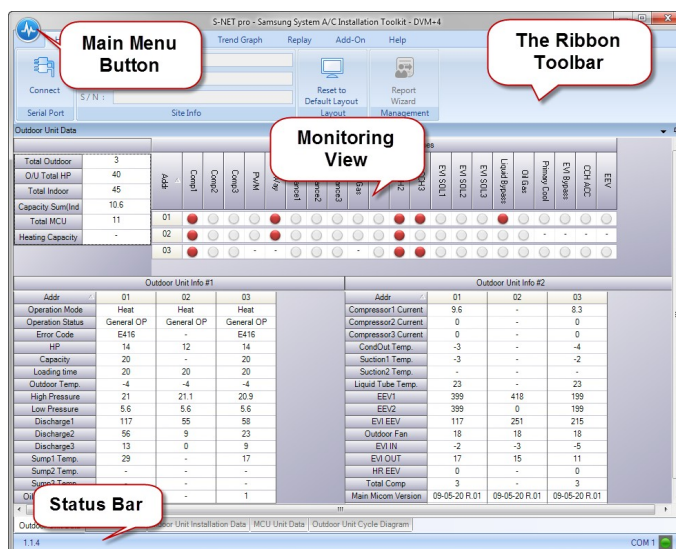


4. After completing installation, check program menu and desktop icons.



1.4 The User Interface

S-NET pro is divided to three main areas. The Ribbon Toolbar, Main Menu and Monitoring View.



The Ribbon Toolbar

S-NET pro's main functions are primarily accessed through the Ribbon Toolbar (or Ribbon for short). It is divided into tabs that group functions according to tasks.

The Monitoring View

The Monitoring View provides frames and panels for all the A/C monitoring factors, including sensor value, switch, valve and installation information of the connected A/C

The Main Menu

You can access main menu by main menu button. In main menu, some primitive functions for starting S-NET pro connection are included. You can see also "Options" button in this menu.

The Status Bar

Version information, Serial port setting and connection status lamp are included in the bottom of the program window frame called status bar.

Part



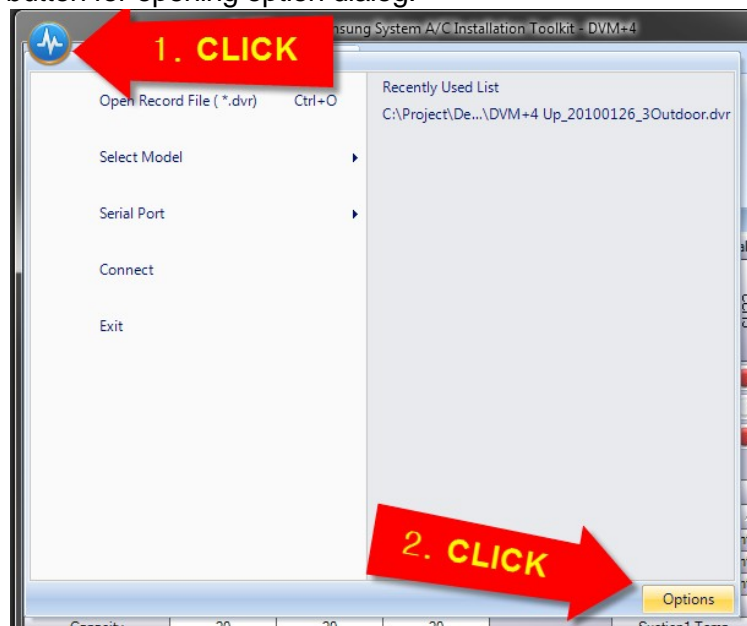
2 Basic Functions

2.1 Options

Opening Option Dialog

You can open option dialog as following step.

1. Click main menu button
2. click "option" button for opening option dialog.

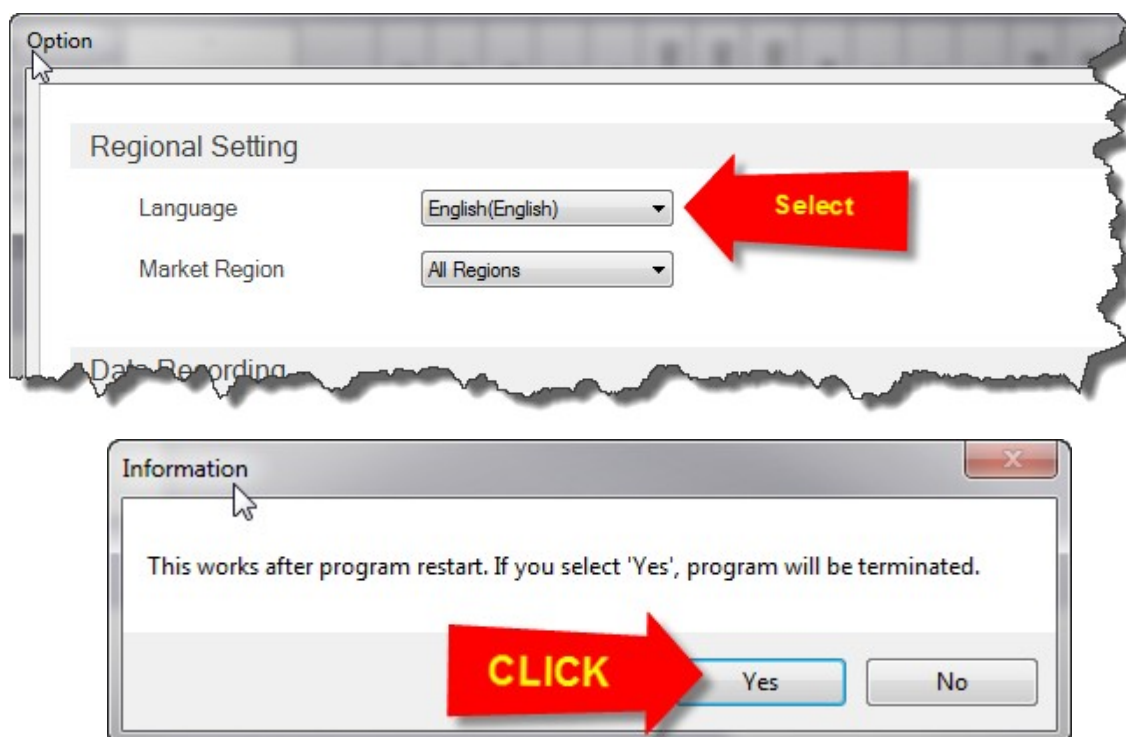


Default language option

S-NET pro is currently supporting English and Korean language. When S-NET pro is starting, it chooses a language by the Windows operating system language setting. If Windows is running on the language that S-NET pro support, S-NET pro is displayed by the language. If the language of OS is not supportable in S-NET pro, S-NET pro is displayed in English by default.

Changing language option

1. Open Option Dialog
2. Select the language you want to display from the language list box.
3. Press OK button in the option dialog to accept the change
4. S-NET pro show a restart message to apply the change. Press 'Yes' button to restart the program.



Default market region option

Samsung commercial A/C has varieties of models divided by regional market. If S-NET pro displays all the models that it can support, you are confused because you should choose among many unused model in your region. You can select proper market region with this option, and S-NET pro will filter models that are not sold in the region.

S-NET pro currently has 3 market regions; Europe, Korea, China, All region. It is automatically configured by MS Windows region setting. For example, Window region setting is "Spain", S-NET pro's default market region will be Europe. If it is not among the countries, setting is 'All region' by default and all the models will be displayed in "Select Model" menu.

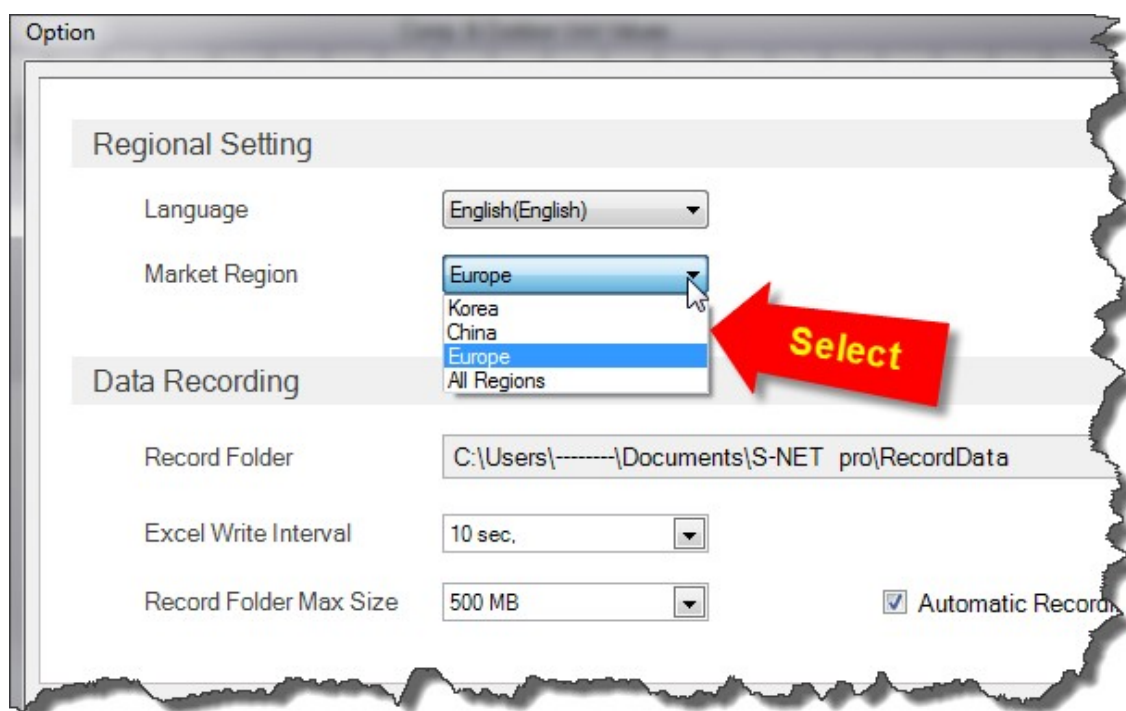
| Model | Korea | Europe | China | ETC |
|--|-----------------------|--------------------------------|-------|-----|
| DVM GEO | DVM GEO 20HP | X | X | |
| Mini DVM (Inverter 3HP) | Mini DVM(3HP) | X | X | |
| Mini DVM (Inverter 4,5,6HP) | Mini DVM(4,5,6HP) | Mini DVM (Inverter 4,5,6HP) | X | |

| | | | | |
|---|-------------------------|------------------|-----------------------------|---------------------------------------|
| Mini DVM (Inverter 8,10HP) | Mini DVM(8,10HP) | X | X | |
| Mini DVM (Digital) | Mini DVM(DSC) | Mini DVM(DSC) | Mini DVM (DSC) | |
| DVM Slim (10HP) | DVM (10HP) | X | X | |
| DVM Slim (5,6,8HP) | DVM (5,6,8HP) | X | X | |
| DVM Water (6,8,10HP) | DVM (6,8,10HP) | X | DVM Water (6,8,10HP) | |
| DVM Water (20HP) | DVM (20HP) | X | DVM Water (20HP) | |
| DVM+ | DVM+ | X | DVM+ | |
| DVM+2 | DVM+2 | DVM+2 | DVM+2 | |
| DVM+3 High Ambient | X | X | X | DVM+3 High Ambient(Middle Asia) |
| DVM+3 /HR3 | DVM+3 /HR3 | DVM+3 /HR3 | DVM+3 /HR3 / DVM Solo | |
| DVM+4 Up | DVM+4 Up | DVM+4 | DVM+4 | |
| DVM+4 | DVM+4 | X | X | |
| DVM | DVM | DVM | DVM | |
| EHS | X | EHS(GEN2) | X | |
| FJM+ | X | FJM+ | FJM+ | |
| FJM | X | FJM | FJM | |
| GHP-E Series | GHP(E) | X | X | |
| GHP D Series | GHP(D) | X | X | |
| Home DVM (2.5,3.5HP) | Home DVM (2.5,3.5HP) | X | X | |
| Home DVM (5HP) | Home DVM (5HP) | X | X | |
| DVM HR | X | DVM HR | X | |
| DVM+2 HR | X | DVM+2 HR | X | |
| RAC Inverter 485 | X | RAC Inverter 485 | X | |
| RAC Inverter AC | X | RAC Inverter AC | X | |
| CAC Inverter | | CAC Inverter | X | |

| | | | | |
|---------------------|---------|-------------------|---------------------|--|
| (2011) | (2011) | (2011) | | |
| CAC Inverter | | CAC Inverter | X | |
| CAC(Non-Inverter) | | CAC(Non-Inverter) | CAC(Non-Inverter) | |
| Super FJM (3HP) | X | X | Super FJM (3HP) | |
| Super FJM (4,5,6HP) | X | X | Super FJM (4,5,6HP) | |

Changing market region option

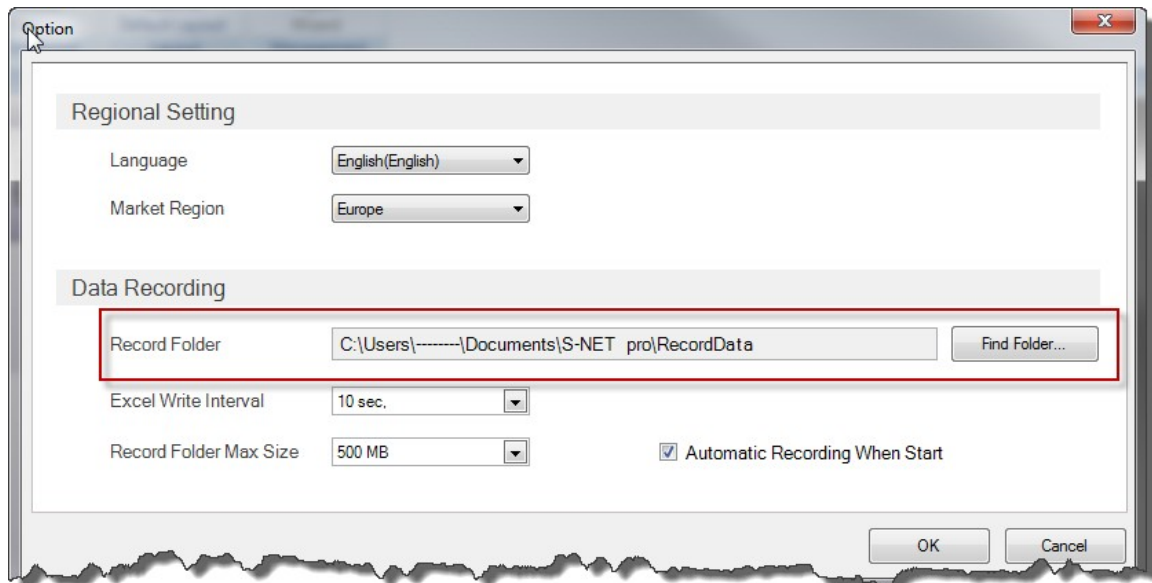
In the option dialog, select appropriate item of "Market Region" selection list. We need restart to apply the option. After S-NET pro is restarted, A/C model projects in "Select Model" of main menu are displayed defined in the market region.



Record folder path

S-NET pro records communication data as two kinds of format. One is encrypted file(*.dvr) for replaying. Another is excel file that users can read the values. These files are saved on the path shown in the picture below.

When pressing [Find Folder...] button, Folder selection dialog is displayed. Please select a folder path you want in the folder selection dialog. After changing the record folder, new files will be saved on changed path. But it does not remove old folder and its files.



Altering excel write interval

When communication file recording is started, excel file will be created and record the data. User can alter its writing interval. This picture is a sample when interval is set as 10 sec.

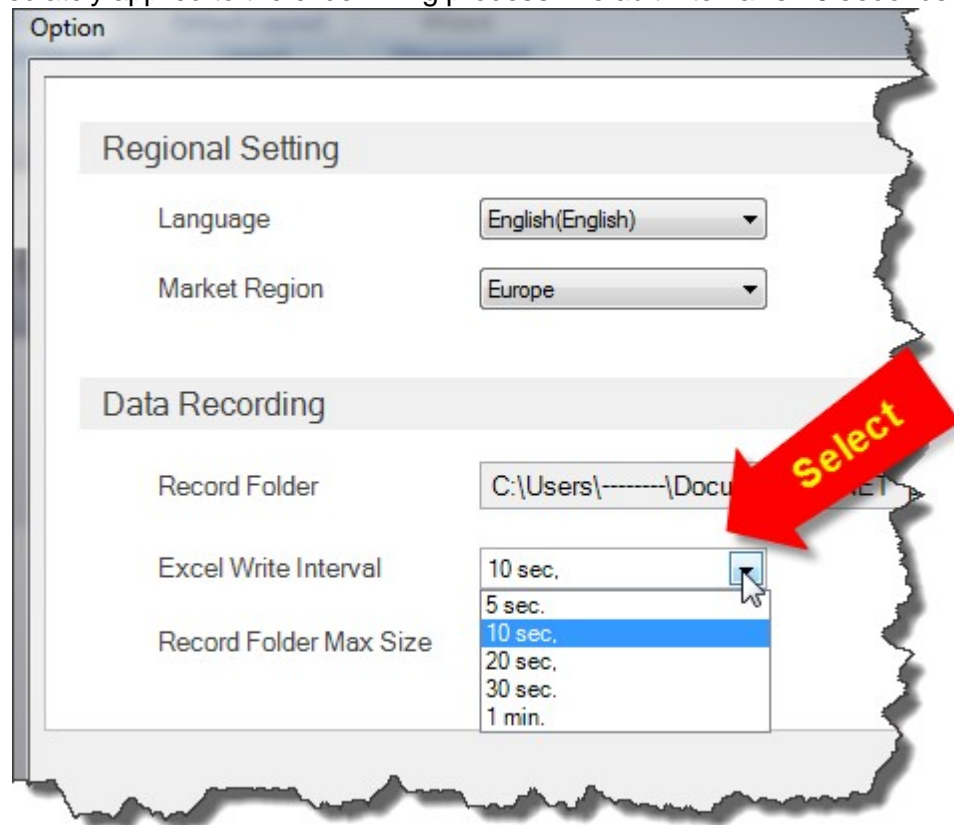
The screenshot shows an Excel spreadsheet with the following data:

| | A | B | C | D | E | F |
|----|----------|-------|-----|-----|-----|------|
| | Time | Comp1 | Co | Co | PWM | 4Way |
| 1 | | | | | | |
| 2 | 23:44:13 | Off | Off | Off | Off | Off |
| 3 | 23:44:23 | Off | Off | Off | Off | Off |
| 4 | 23:44:33 | Off | Off | Off | Off | Off |
| 5 | 23:44:43 | Off | Off | Off | Off | Off |
| 6 | 23:44:53 | Off | Off | Off | Off | Off |
| 7 | 23:45:03 | Off | Off | Off | Off | Off |
| 8 | 23:45:13 | Off | Off | Off | Off | Off |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |

A red callout box points to the time column with the text '10 seconds of writing interval'.

Excel example of 10 seconds of interval

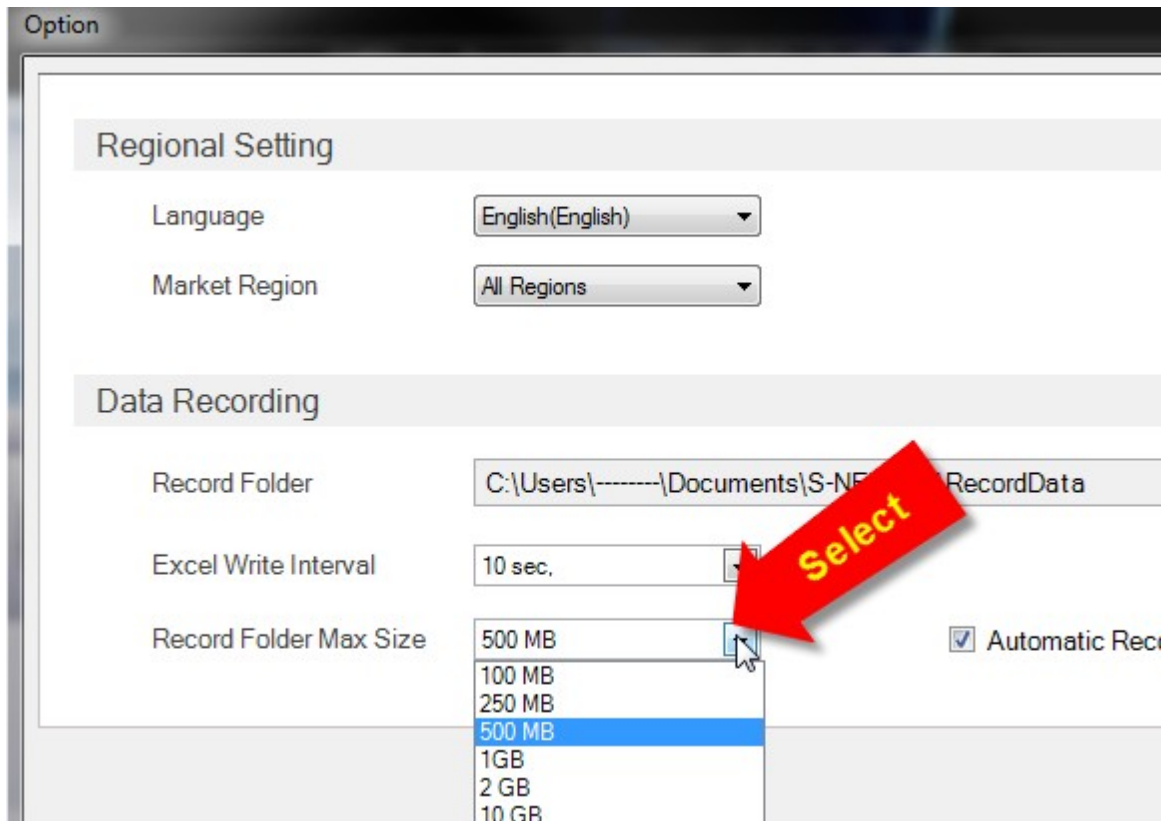
When selecting "Excel Write Interval" list, you can see interval time from 5 seconds to 1 minute. Please select interval time you want. After changing the interval, new interval will be immediately applied to the excel writing process. Default interval is 10 seconds.



Setting record folder size

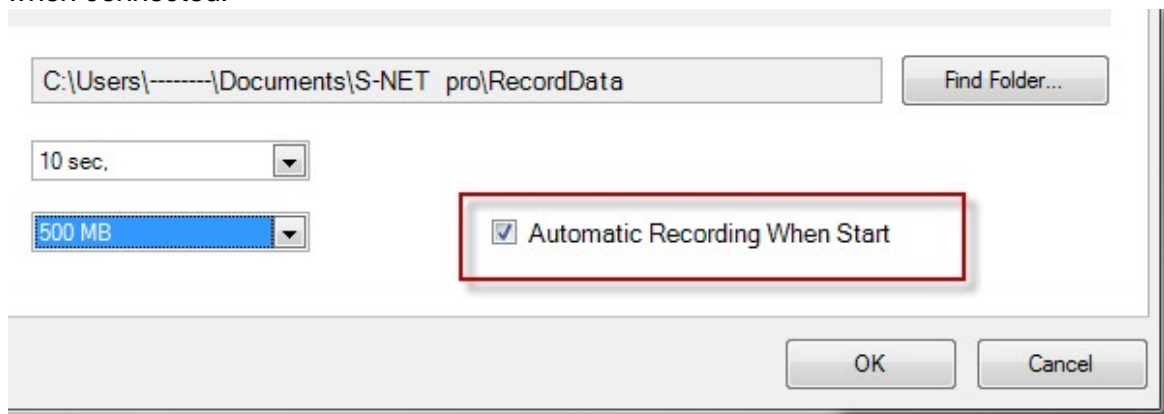
Maximum record folder size is configurable. When record folder exceeds max size, S-NET pro remove files from oldest one to fit the max size.

The range is from 100 MB to 10 GB. Set the size by the free hard disk size. If disk has very small free size remained, set it to smaller size not to confront disk size full problem. Default max size is 500 MB.

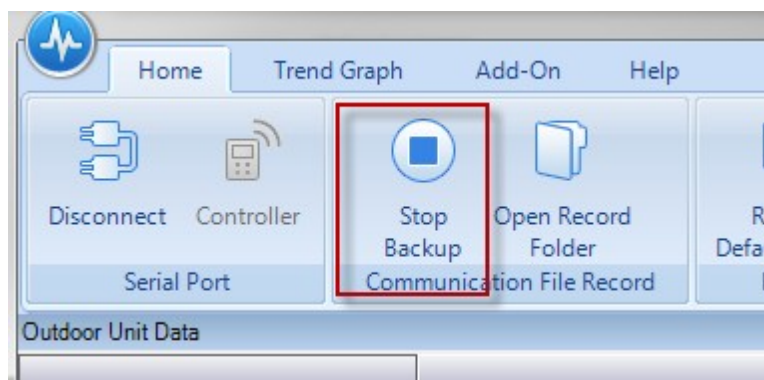


Automatic recording when start

If [Automatic Recording When Start] is checked, [Start Backup] button is initially pressed when connected.



Recording is started when Connected if this option is checked.



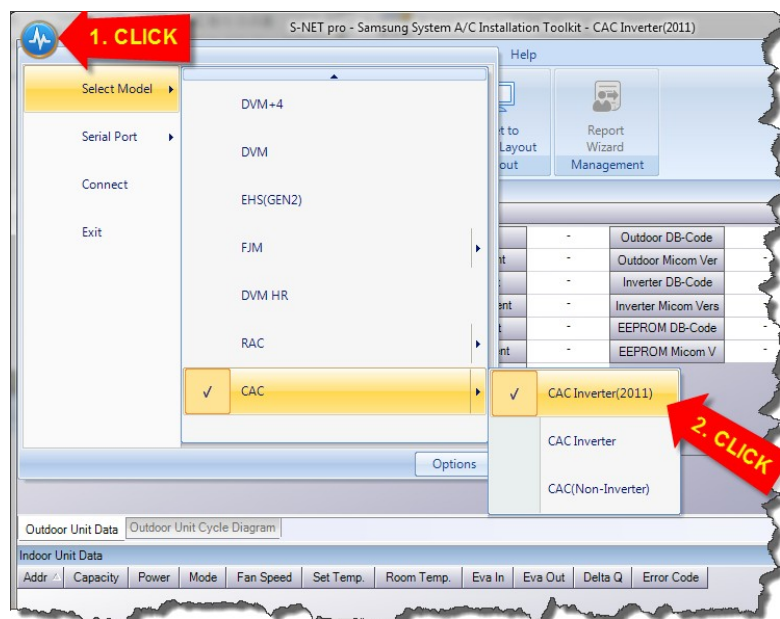
+

2.2 Starting Communication

Before you monitor the A/C, you have to select corresponsive project and choose the serial port connected to the serial converter.

Selecting the project

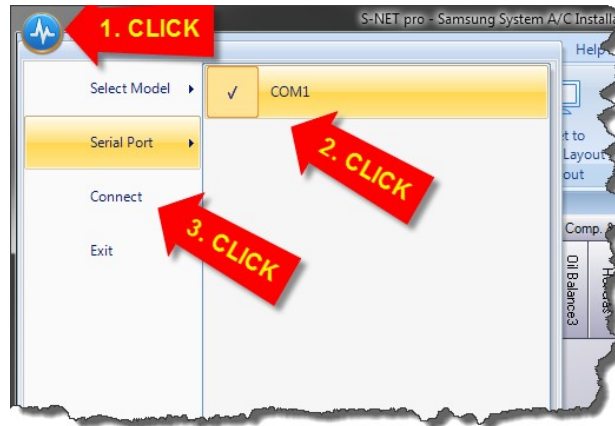
1. Click main menu button.
2. From "Select Model" list, choose corresponsive project name. If you successfully load the project, S-NET pro remembers the project. When you run S-NET pro later again, the last used project will be selected by itself.



Setting serial port and connecting

1. Click main menu button.

2. From "Serial Port" list, choose COM port which is connected to the serial converter. Only existing COM port in the PC is listed. S-NET pro remembers the port setting. When you run S-NET pro later, the port you choose will be selected by itself.
3. Click "Connect" button to start communication.

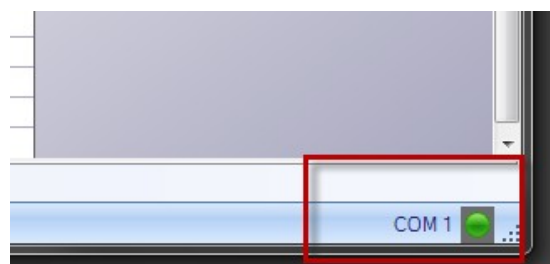


4. You can also connect in "Home" ribbon button - "Connect" button.



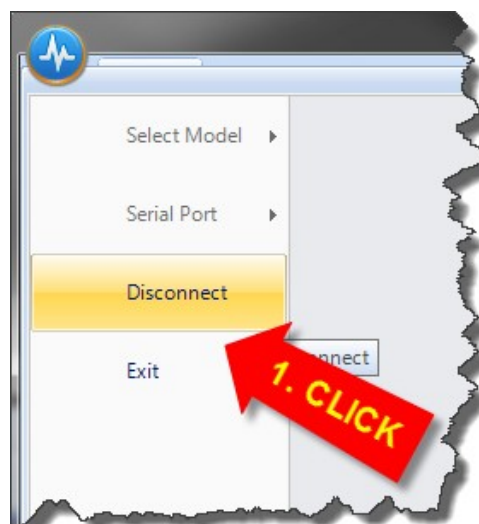
Checking communication

Please check the communication lamp on the status bar. When S-NET pro gets data from serial port, the lamp will be lit.



Disconnecting port

1. When S-NET pro is connected, "Connect" button is changed to "Disconnect" button. Please click this button to disconnect.



2. Alternatively, use "Disconnect" button in Home menu in ribbon toolbar.



2.3 Controlling Indoor Units

You can control indoor units like using a remote controller. This function is available when S-NET pro is connected to serial port. When it is replay mode, this function is disabled.

If a interface module is installed, this function is not available. For controlling indoor units by S-NET pro, just unplug the power jack or communication jack of the interface module.

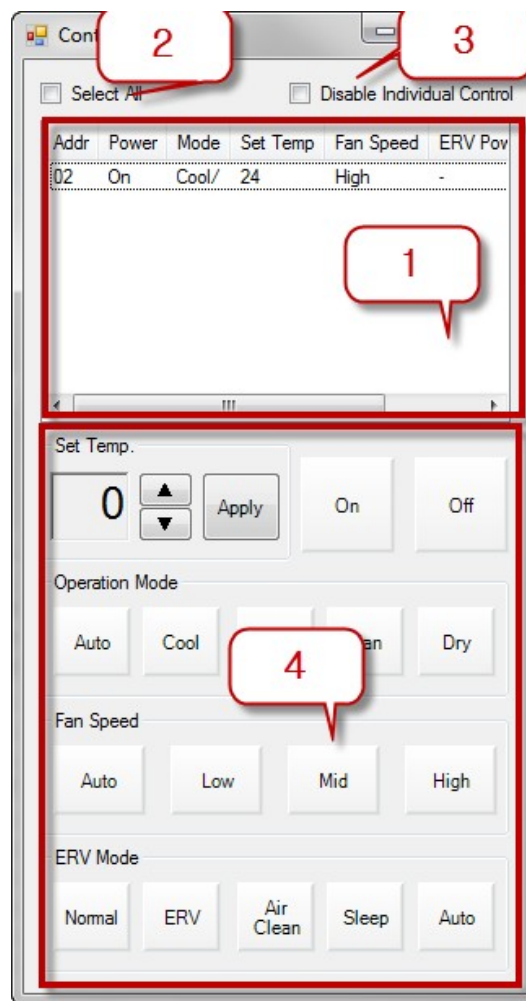
Opening "Controller" dialog

Go to [Home] in ribbon toolbar. Select [Controller] button when S-NET pro is connected to serial port.



Controlling Indoor Units

1. Select the indoor unit you want to control in this list panel.
2. If you want to select all indoor units that listed, check "Select All" .
3. If you check "Disable Individual Control" and send operation by clicking one of any buttons, wired or remote controller will be disabled. Use this option during test run not to be disturbed by other operation in the room.
4. When you click one of the buttons, control message will be sent. In the case of setting temperature, you should click "Apply" button to send control. If the model is not supporting the feature you select, the control will be canceled. For example, the indoor unit that does not support ERV mode, clicking ERV mode has no reaction.

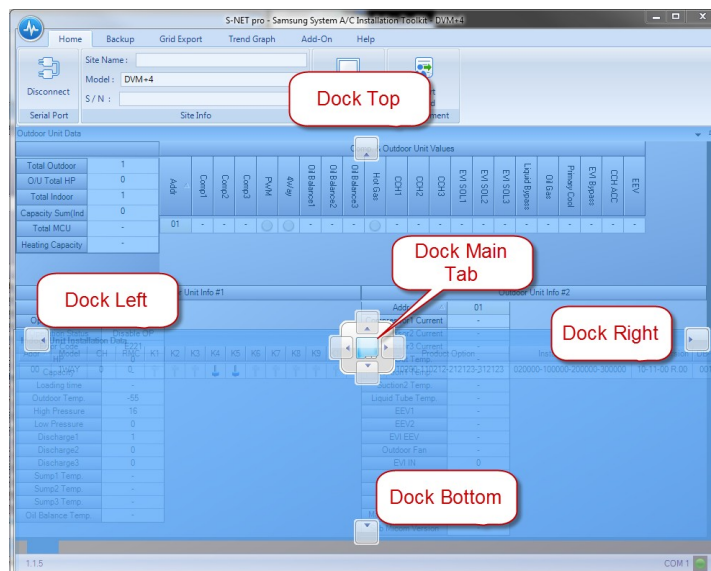


2.4 Customizing View Layout

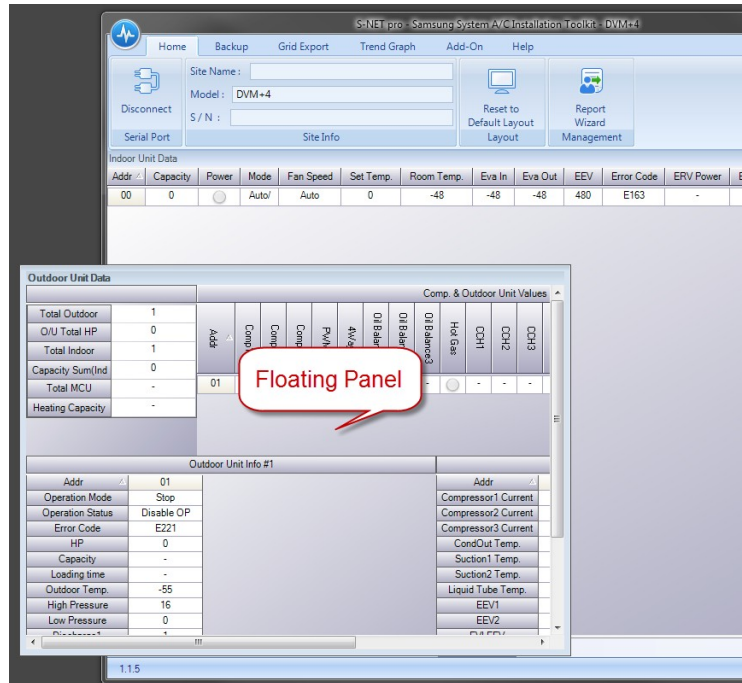
Every panel can be attached any side of main frame or detached. It also can be resized by a user.

Changing docks

S-NET pro has 5 docks; Top, left, right, bottom and main tab dock. When you click title bar of the panel and move it, you can see docking UI as the picture below. Please drag and drop your mouse cursor where you want to dock on.

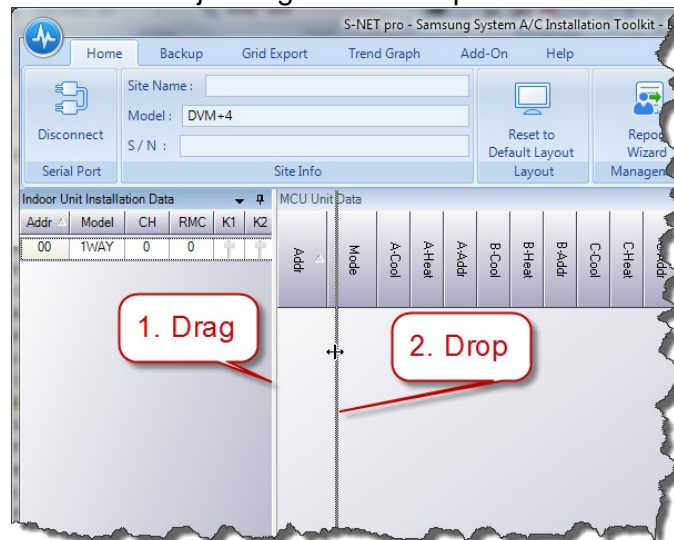


If you do not leave the cursor any of the dock, the panel will be remained to a floating panel. You can move the panel like a independent window.

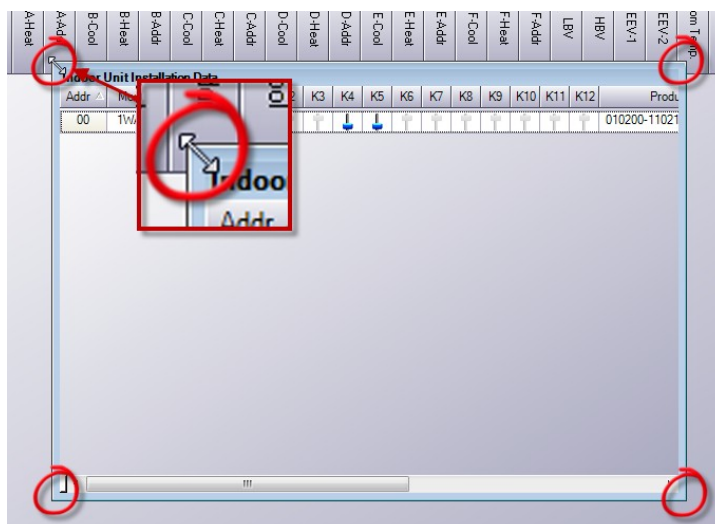


Resizing dock area and panel

1. For resizing dock area, drag the split border. You can see a new border indicator.
2. Please move the mouse to adjust regions and drop cursor.

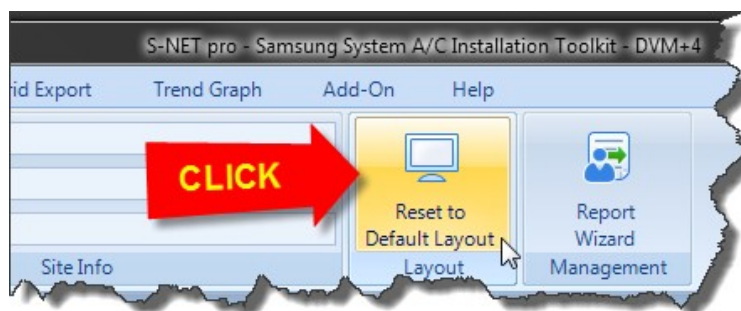


For floating panel, move mouse to the corner of the panel. When cursor shape is changed, drag and drop for resizing



Resetting to default layout

If you want reset layout to project default, Please click "Reset to Default Layout" in Home menu.



2.5 Data Backup

User can save a encrypted record file (*.dvr) and excel file with this menu.

Click "Home" tab in ribbon toolbar.

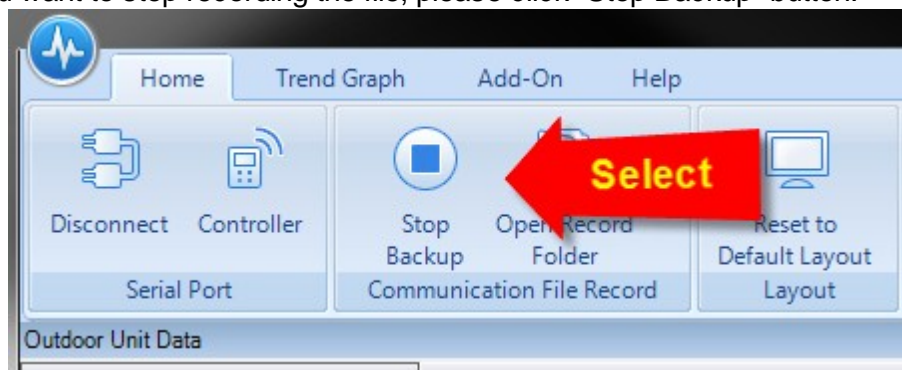
Recording to a file

1. When you start a serial connection, "Start Backup" button gets enabled. Click the button.
2. The record file will be stored in the year and date specified folder that is sub folder of "Record Folder" of program option.
3. S-NET pro record two kinds of file. One is encrypted replay file (*.dvr) and another is excel file.



Stopping recording a file

When you want to stop recording the file, please click "Stop Backup" button.



2.6 Making Test Run Report

To report the result of the test run, use "Report Wizard" in Home menu. Every test result including A/C installation and site information will be exported in PDF format. If the outdoor unit supports "Auto Inspection", the result of auto inspection is included.

Currently auto inspection supporting model is "DVM +4 series".

Before Starting Report Wizard

S-NET pro should be serial connected for this function.

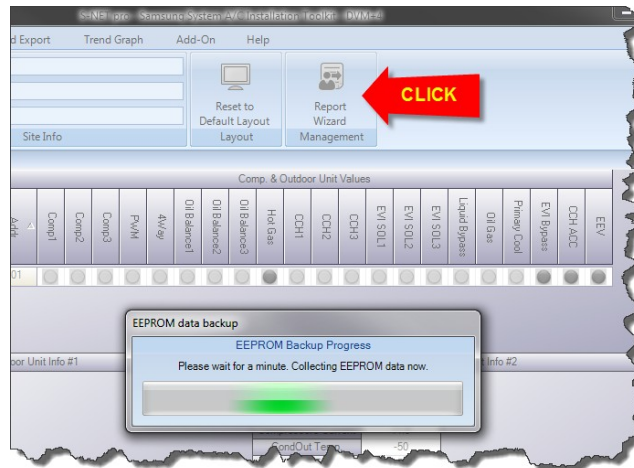
For auto inspection supporting models, please complete auto inspection process in A/C outdoor unit. For the information of auto inspection, refer the technical book.

For models that do not support auto inspection function, run A/C until every cycle factors are in stable state. S-NET pro captures every values at the time you activate Report Wizard function.

Starting report wizard

Click "Home" menu and click "Report Wizard" button.

If it is auto inspection supporting model, you can see EEPROM data backup dialog. For other models, this dialog is omitted.



Filling site and A/C information

1. Wizard dialog pops up. Check the status bar on the bottom of the dialog whether auto check is completed or not for auto inspection supporting models. If it is not complete, please complete the auto inspect operation of A/C outdoor unit.
2. Fill the form. Grayed areas are system filled value. You can't rewrite the fields.
3. Click Next

| | Item | Contents |
|--------------------------|-----------------------------------|----------|
| Site Information | Site Name | |
| | Outdoor Unit Location | |
| | Indoor Unit Location | |
| | Customer Information | |
| | Test Operation Date | |
| | Test Operation Company | |
| Installation Information | Commissioning Engineer | |
| | Outdoor Unit Quantity | 1 |
| | Outdoor Units Total Capacity (HP) | 18 |
| | Indoor Units Total Capacity (HP) | 0 |
| | Indoor Unit Quantity | 1 |
| | Max Pipe Length (m) | |
| | Additional Refrigerant (Kg) | |
| | MCCB Capacity (A) | |
| | Wire Specification | |
| | Remarks | |

Cancel Next >>

Status: Completed Description: Auto Check Operation has completed.

4. Write model and serial information in the next step and click "Create Report" button.

Report Wizard - Device Information

[Report Wizard - Device Information]

Outdoor Unit Information

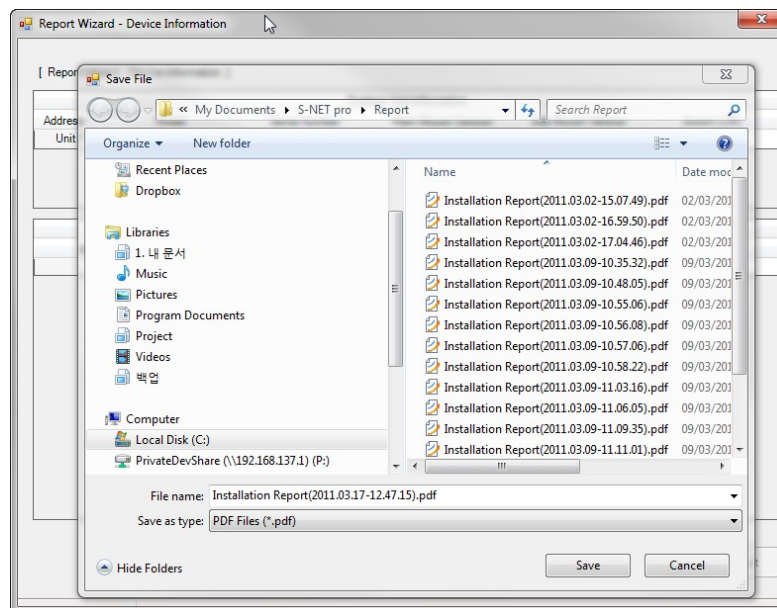
| Address | Model | Serial Number | Main Micom Version | Sub Micom Version | Switch (Off) |
|---------|-------|---------------|--------------------|-------------------|--------------|
| Unit 1 | | | | | |

Indoor Unit Information

| Address | Model | Serial Number |
|---------|-------|---------------|
| 00 | | |

<< Previous Create Report

5. From Save File dialog, specify saving location and file name. The result will be stored in PDF format.



2.7 Trend Graph Monitoring

You can monitor the trends of A/C values(sensors/actuators /switches) with "Trend Graph" function. Sometimes, you might need to know the time variations of factors to diagnose the system. "Trend Graph" gives you such a service. With this feature, specific factors you want to trace are be selected, and displayed in view.

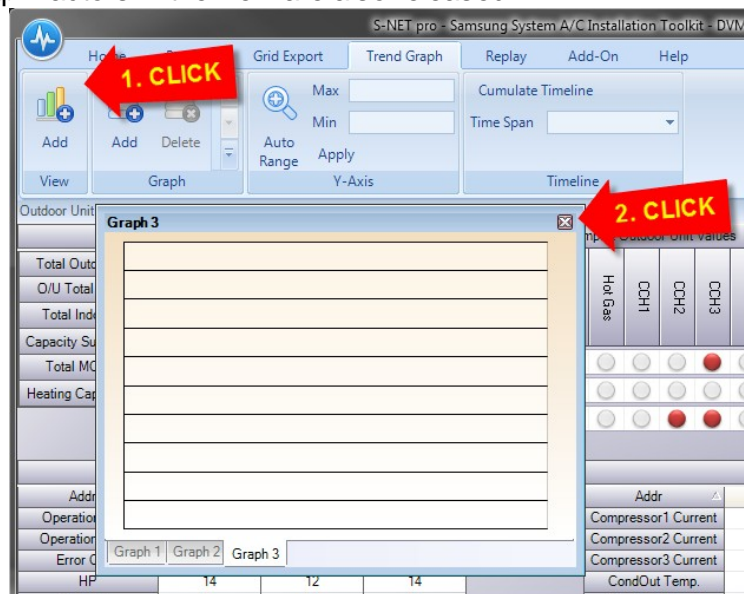
Click "Trend Graph" menu in ribbon toolbar.

Adding and deleting graph views

1. For adding graph view, click "Add" and "View" group. S-NET pro can make maximum 4 graph views as you click "Add" button. When 4 views are created, "Add" button is disabled

until you delete a graph view.

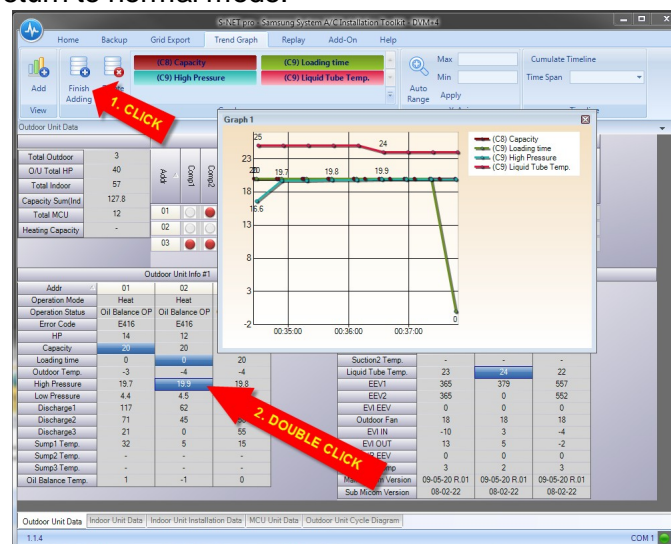
2. For deleting graph view, Click [X] button in right-top of the graph view. When the graph is removed, graph factors in the view are also released.



Adding graph factors

1. For adding graph factor, click "Add" button in "Graph" group. Title "Add" is changed to "Finish Adding" and factor selecting mode is activated.

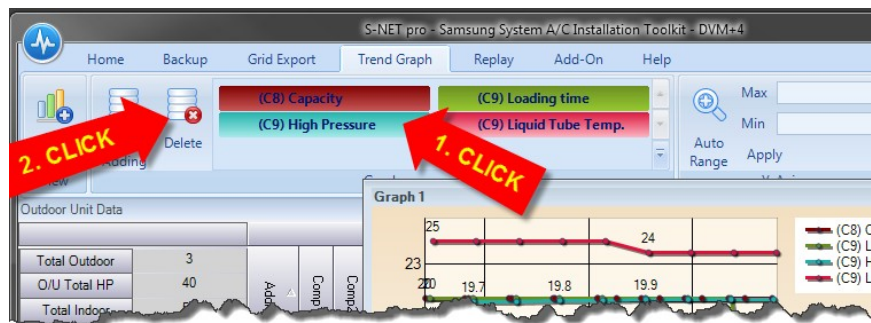
2. In factor selecting mode, every factor color you can select flickers gray and white. When you double click the field, the factor will be added in current graph view. You can add maximum 6 factor per a graph view. When you finish adding factors, Click "Finish Adding" button to return to normal mode.



Deleting graph factors from factor gallery

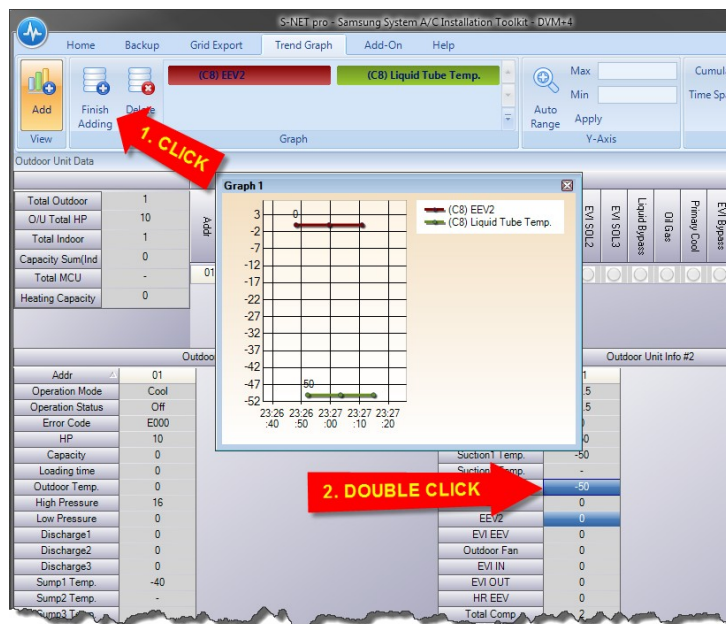
1. Select a factor you want to delete from factor gallery in "Graph" group.

2. Click "Delete" button in "Graph" group. Selected factor in factor gallery will be deleted.



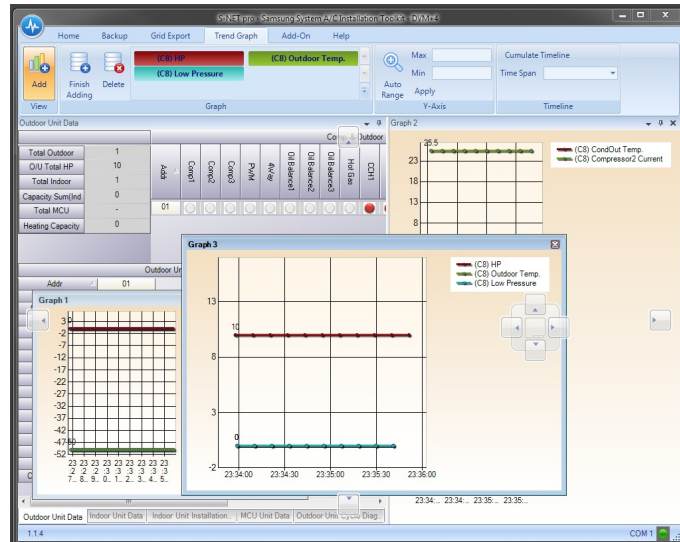
Deleting graph factors in selecting mode

1. Please click "Add" button in Graph group for entering factor selecting mode.
2. Previously added factors will be shown as blue background color. Double click the field for removing.



Relocating and resizing graph views

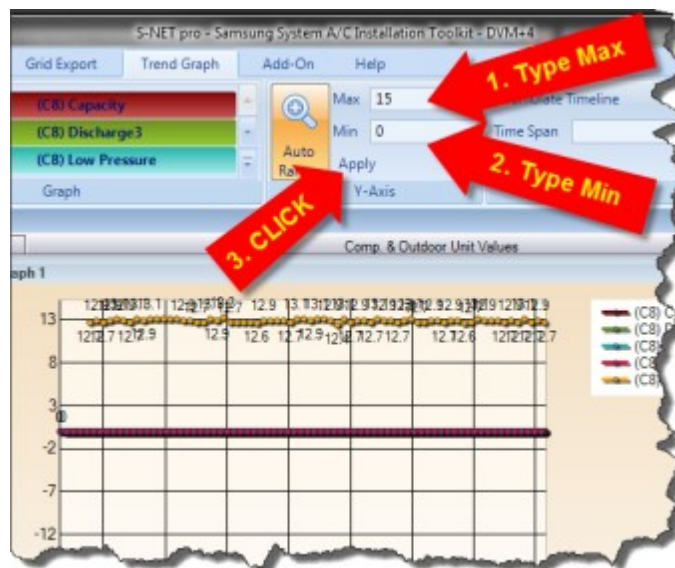
The relocating and resizing operation of this panel is totally same with monitoring panels. See [Customizing View Layout](#) [29] section.



Zooming Y-Axis

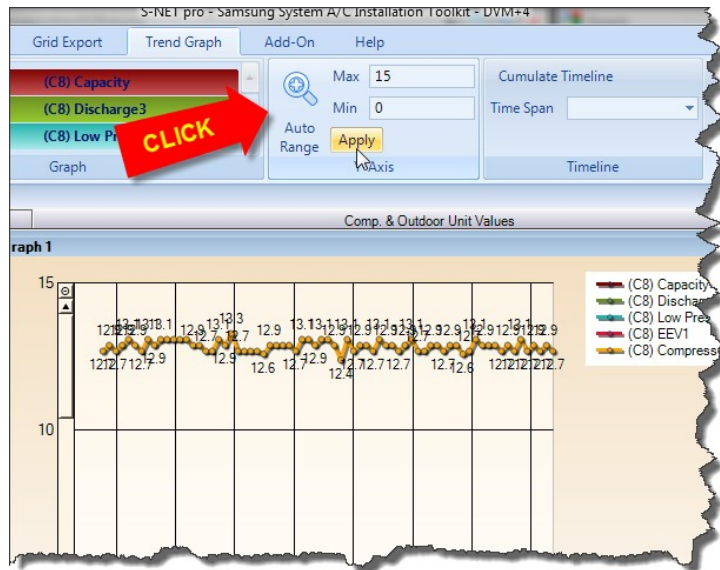
Sometimes, you need to zoom in or zoom out Y-Axis for detail view.

1. Type max Y value for the graph panel
2. Type min Y value to be displayed in the graph panel
3. Click Apply button.



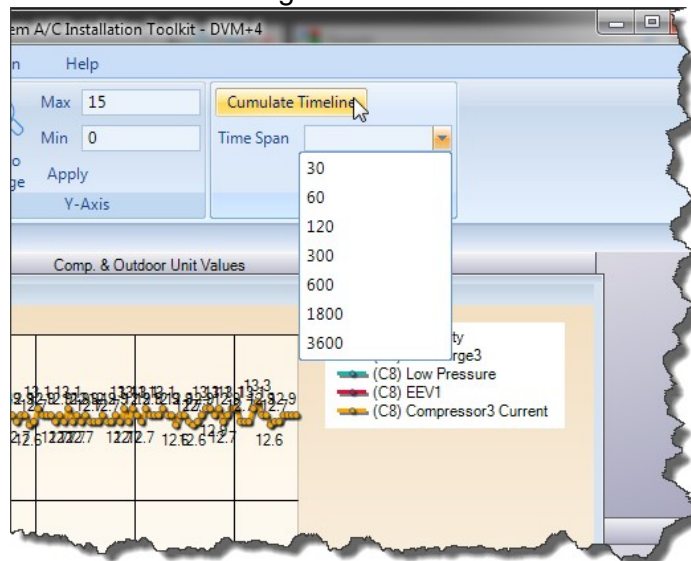
After applying, you can see zoomed, more detail graph between minimum and maximum Y values

When you want to see every factor without scroll, Just click Auto Range button to make fit on the panel.



Adjusting time span

Default option is "Cumulate Timeline", meaning that the graph is displaying from the starting time and the data is cumulating.

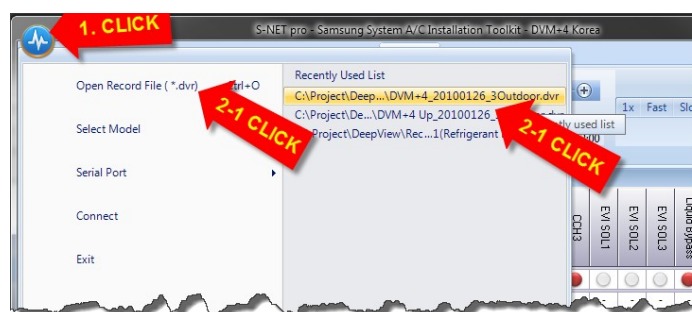


But, if you set time span, X-Axis shows only the time span. For example, if you select 600 seconds, graph displays the last 600 seconds of data on the panel.

2.8 Replaying a Record File

During communicating to A/C set, you can record communication data as record file (*.dvr). A record file works like a video tape. You can replay it without physical network connection. For example, when you need to inspect factor data in more detail later, S-NET pro replay exactly same situation. For recording, please refer "Backup" ribbon toolbar menu.

Opening a record file



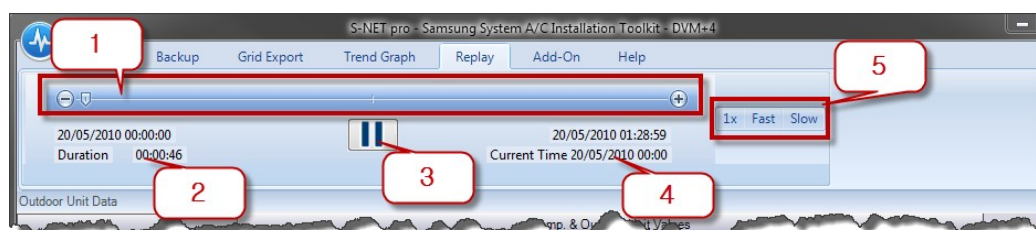
1. Click "Main menu button" to expend the main menu.
- 2-1. "Open Record File" opens record file open dialog. You can select a record file.
- 2-2. Or if you used record file in past, the location is saved in "Recently Used List". Select a file from this list for quick open.

After opening record file, "Replay" menu in ribbon toolbar is selected automatically.

Restricted functions in replay mode

| Menu | Function | State |
|--------|------------------------|-----------------|
| Home | Report Wizard | Button Disabled |
| Backup | Start Backup | Button Disabled |
| | EEPROM Backup | Button Disabled |
| Add-on | Controller | Button Disabled |
| | EEPROM Writer | Button Disabled |
| | Indoor Option Writer | Button Disabled |
| | Auto Inspection Result | Button Disabled |

Using Replay menu



1. With this time seek bar, you can jump to specific time you want. Drag seek bar time point and drop it to any time line you want, then S-NET pro replays from the time in which you moved by seek bar point. For more detail moving, use +, - button. When you click + button, it slightly forwards. For backward, click - button.
2. Start time of this record file is displayed. Duration time from start is also showed in this location.
3. You can play and pause this replaying mode by this play button.
4. End time of this record file is displayed. Current time means the local time when this file was recorded.

5. When you click 'Slow', time goes slow. By clicking 'Fast', time goes faster. You can select among 1/2/4/8/16 time speed.

Part



3 Add-On Functions

3.1 Raw Data Analyzer

You can monitor communication streams by this function. You can filter the data by address or communication mode. This function is also available in replay mode.

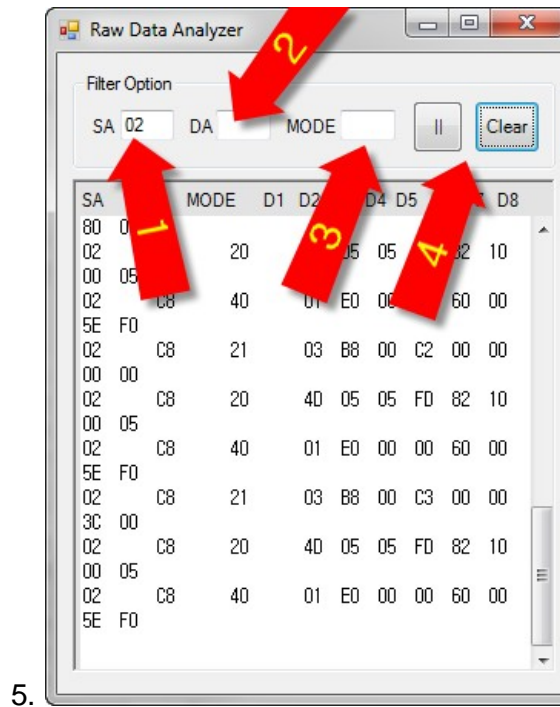
[Opening "Raw Data Analyzer" dialog](#)

Click [Add-On] in ribbon toolbar. Select [Raw Data Analyzer] button when S-NET pro is connected to serial port or on replay mode.



[Controlling Indoor Units](#)

1. You can filter data by sender address. Please specify target address you want to monitor.
2. You can filter data by destination address. Please specify target address you want to monitor.
3. You can filter data by operation mode.
4. You can play and pause the by play button. If you want to clear all data in display, please press "Clear" button.



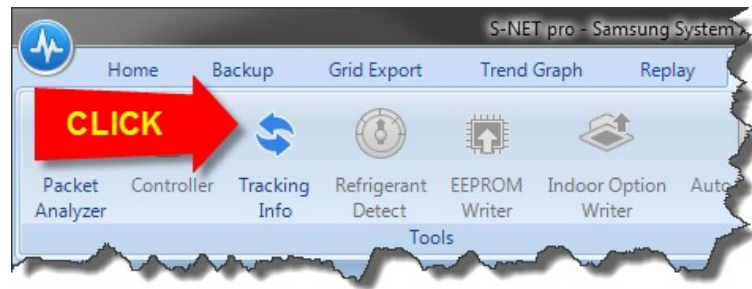
All these three option fields are AND conditioned. So, data that satisfies all options are displayed.

3.2 Tracking Info

You can monitor the communication among outdoor unit, indoor units, interface module and MCUs by this function. When there is some problem in communication, unresponsive device is easily identified with this device communication table.

Opening "Tracking Info" dialog

Click [Add-On] in ribbon toolbar. Select [Tracking Info] button. This function is also available in replay mode.



Monitoring communication



When certain device sends messages, the lamp of address is turn on. With this lamp status, you can trace which device is not responding.

If two other devices send message in the same time, data packet may be broken. In that case "Collision Detect" lamp will be turn on.

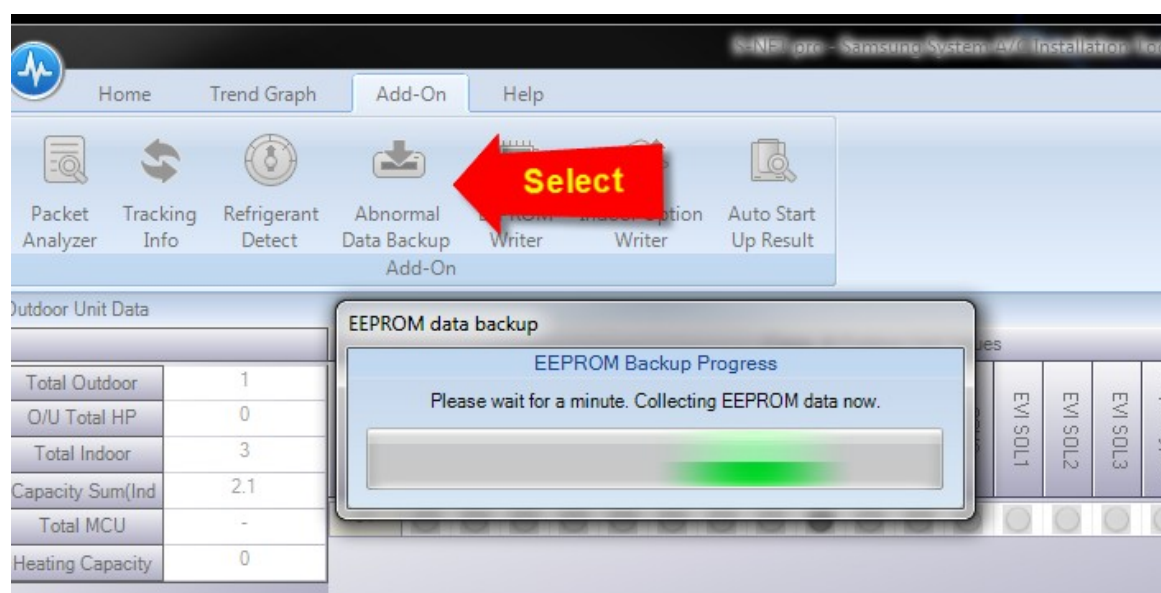
3.3 Abnormal Data Backup

Extracting abnormal data from A/C outdoor unit.

Some latest A/C models stores data when it runs abnormally. This function extracts the data from A/C outdoor unit and exports to excel format. Supporting A/C models are as below.

- DVM+3
- DVM+4
- DVM Inverter
- EHS(GEN2)

1. For EEPROM Backup supporting model, when you connect the port, "EEPROM Backup" button is enabled. Please click the button for the operation.
2. EEPROM data backup progress dialog will be displayed for indicating the progress.



Downloaded data will be stored as excel format like this picture below. The file is stored in [\$record folder\YYYY-MM-DD\HH-MM-SS-OutdoorHistory] folder. \$record folder means "Record Folder" in S-NET pro option.

| [Unit] | | | | | | | | | | | | | | | | | | | |
|--------|--------------------------------|-----------|--|------------|-----------|---------|---------|-----------|-----------|-----------|-----|-----|-----|-------|-------|-------|---------|------|---------------|
| A1 | B | C | [Samsung Electronics System Air conditioner Cycle Information] | | | | | | | | | | | | | | | | |
| 4 | Serial Number: | | | | | | | | | | | | | | | | | | |
| 5 | Version: 1.14 | | | | | | | | | | | | | | | | | | |
| 6 | Save Time: 2011-03-09 12:59:32 | | | | | | | | | | | | | | | | | | |
| 7 | [Additional Information] | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | |
| 11 | Time | Sum of In | Error Code | Error Unit | Cool/Heat | Outdoor | Cooling | Discharge | Discharge | Discharge | CT1 | CT2 | CT3 | Sump1 | Sump2 | Sump3 | Outdoor | Cond | Out High Pres |
| 12 | 0 | 0 | 0 | 0 | 255 | 0 | 0 | 0 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 13 | 60 | 750 | 0 | 255 | 1 | 0 | 32 | 0 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 14 | 120 | 750 | 0 | 255 | 1 | 0 | 32 | 0 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 15 | 180 | 750 | 0 | 255 | 1 | 1 | 32 | 12 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 16 | 240 | 750 | 0 | 255 | 1 | 1 | 32 | 12 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 17 | 300 | 750 | 0 | 255 | 1 | 22 | 34 | 14 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 18 | 360 | 750 | 0 | 255 | 1 | 22 | 36 | 16 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 19 | 420 | 750 | 0 | 255 | 1 | 22 | 37 | 17 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 20 | 480 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 21 | 540 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 22 | 600 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 23 | 660 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 24 | 720 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 25 | 780 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 26 | 840 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 27 | 900 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 28 | 960 | 750 | 0 | 255 | 1 | 22 | 40 | 20 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 28 | 40 |
| 29 | 1020 | 0 | 0 | 255 | 1 | 0 | 0 | 0 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 9 | 10 |
| 30 | 1080 | 750 | 0 | 255 | 2 | 0 | 28 | 0 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 9 | 10 |
| 31 | 1140 | 750 | 0 | 255 | 2 | 0 | 28 | 0 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 9 | 10 |
| 32 | 1200 | 750 | 0 | 255 | 2 | 1 | 28 | 8 | 80 | 81 | 0 | 7 | 8 | 0 | 50 | 46 | 0 | 9 | 10 |

3.4 EEPROM Writing

For latest A/C models, you can load outdoor unit E2PROM options with this function. Currently supporting models are as follows.

Supporting models

- DVM+4
- CAC inverter(2011)

Before Opening EEPROM Writer

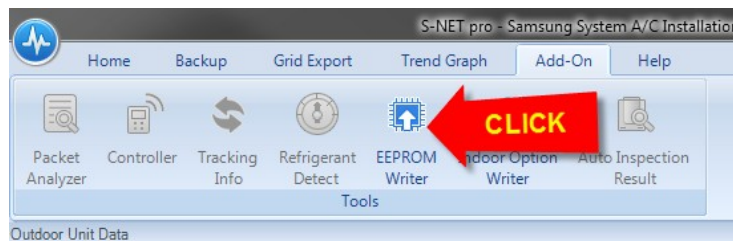
S-NET pro serial communication should be disconnected. If it is on connection, please disconnect by "Disconnect" button in "Home" ribbon tool bar. When it is still connected, "EEPROM Writer" button is disabled.

S-NET pro should not be in replay mode. If it is in replay mode, please stop replaying. An option file(*.src) should be prepared. If you don't have it, contact with your regional technical branch.

S-NET pro does not detect whether the option file's model data is matching with the A/C or not. Please be careful to use right file for the A/C.

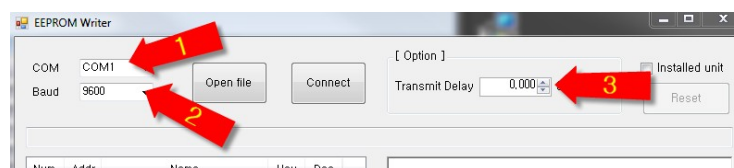
Opening "EEPROM Writer" dialog

Click [Add-On] in ribbon toolbar. Select [EEPROM Writer] button.



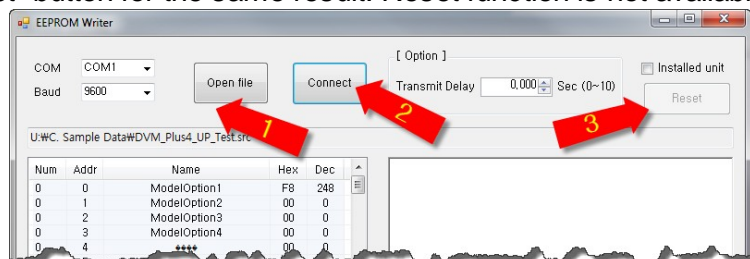
Setting configurations

1. COM port : This should be the port name by which the 232-485 converter is connected.
2. Baud : Please leave it to default setting. It is 9600.
3. Transmit Delay : Please leave it to default setting. It is 0.000.

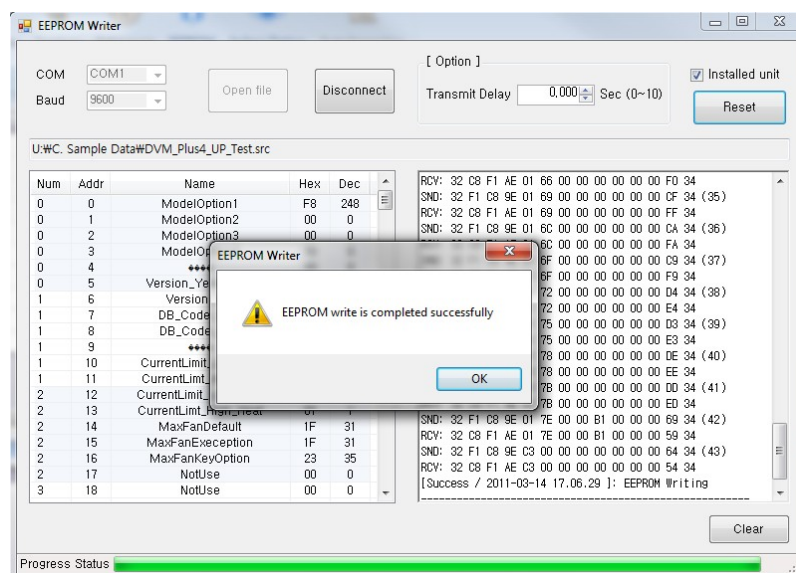


Loading a data file and Establishing connection

1. Click "Open file" button to select the EEPROM data file(*.src). When the file is loaded on S-NET pro, the content will be shown on the table view.
2. Click "Connect" button to get ready for data sending.
3. Reset power of press K1 switch on the outdoor unit. Or in the case of DVM+4, you can press "Reset" button for the same result. Reset function is not available in CAC model.



Data transferring



When outdoor unit is reset, data will be automatically transferred. Check "Progress Status" on the bottom of dialog. As finishing sending data, popup message for the result is showed. Please reset the outdoor unit after finishing this procedure.

3.5 Indoor Option Writing

For latest A/C indoor models, you can read and write indoor unit option code with this function. Currently supporting models are as follows.

Supporting models

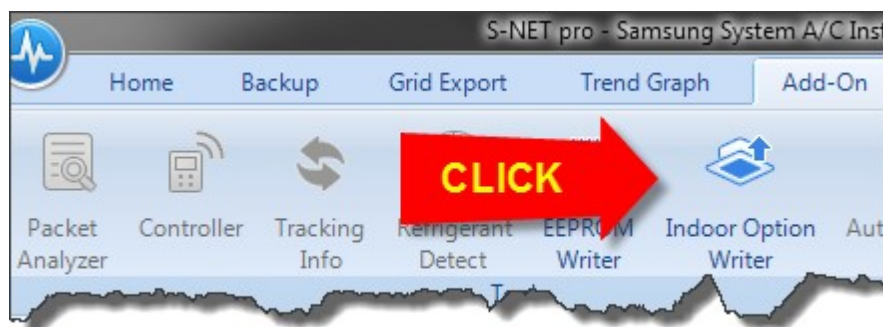
- Global 4-Way indoor unit

Before Opening Indoor Option Writer

1. For using this function, please disconnect serial communication before click [Indoor Option Writer] button.
2. This is unavailable during replay mode. Stop replaying, if replay mode is on.
3. Please remove or power off the interface module if connected.
4. On the case of 1,2 or 3, [Indoor Option Writer] button will be disabled.
5. Communication between outdoor unit and indoors should be OK.

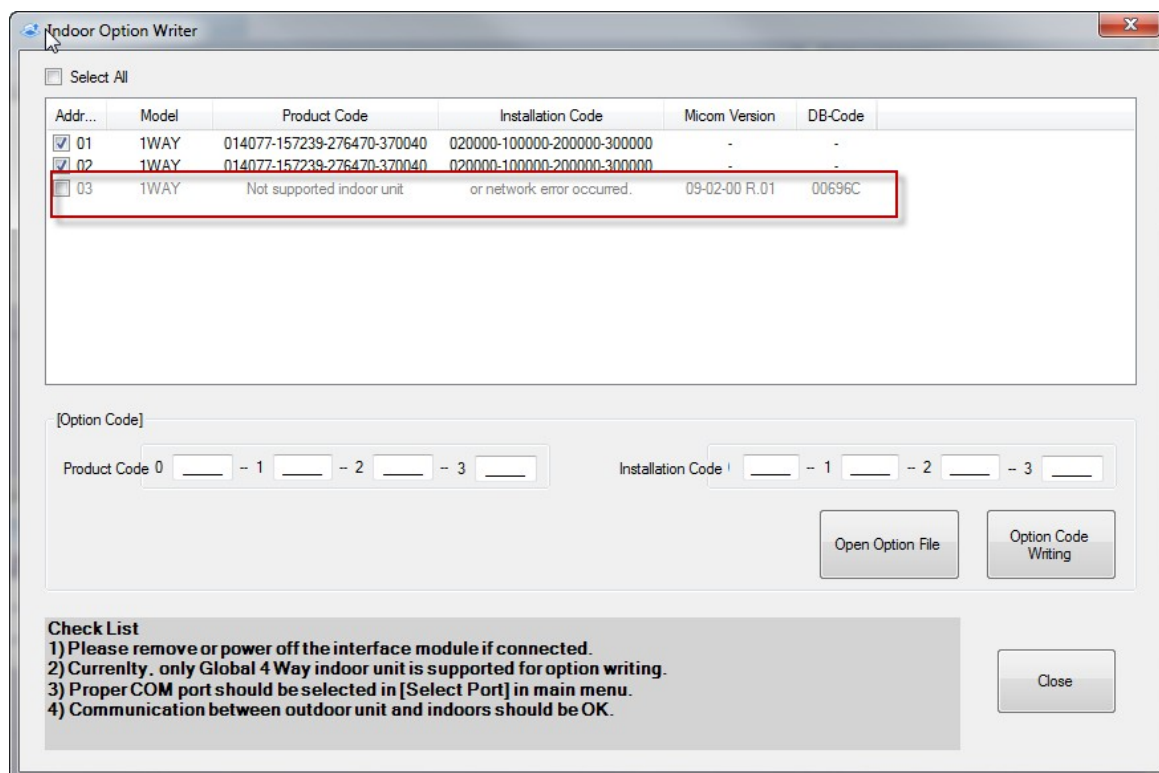
Opening "EEPROM Writer" dialog

Click [Add-On] in ribbon toolbar. Select [Indoor Option Writer] button.



Connecting and read option code

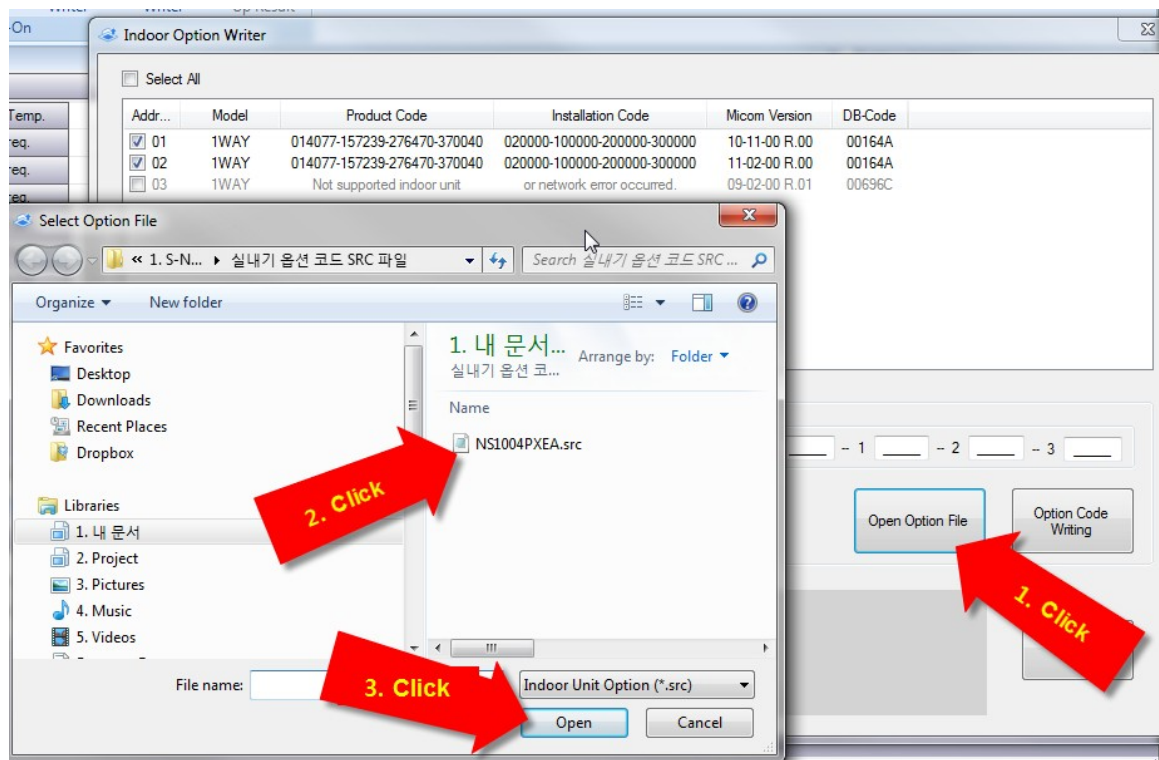
1. After Indoor Option Writer dialog is displayed, it detects indoor units and add them on list view.
2. It reads product option and installation option. For unsupported indoor units, "Not supported indoor unit or network error occurred" message is shown and the indoor unit is disabled in the list view. You can not write options on unsupported indoor units.



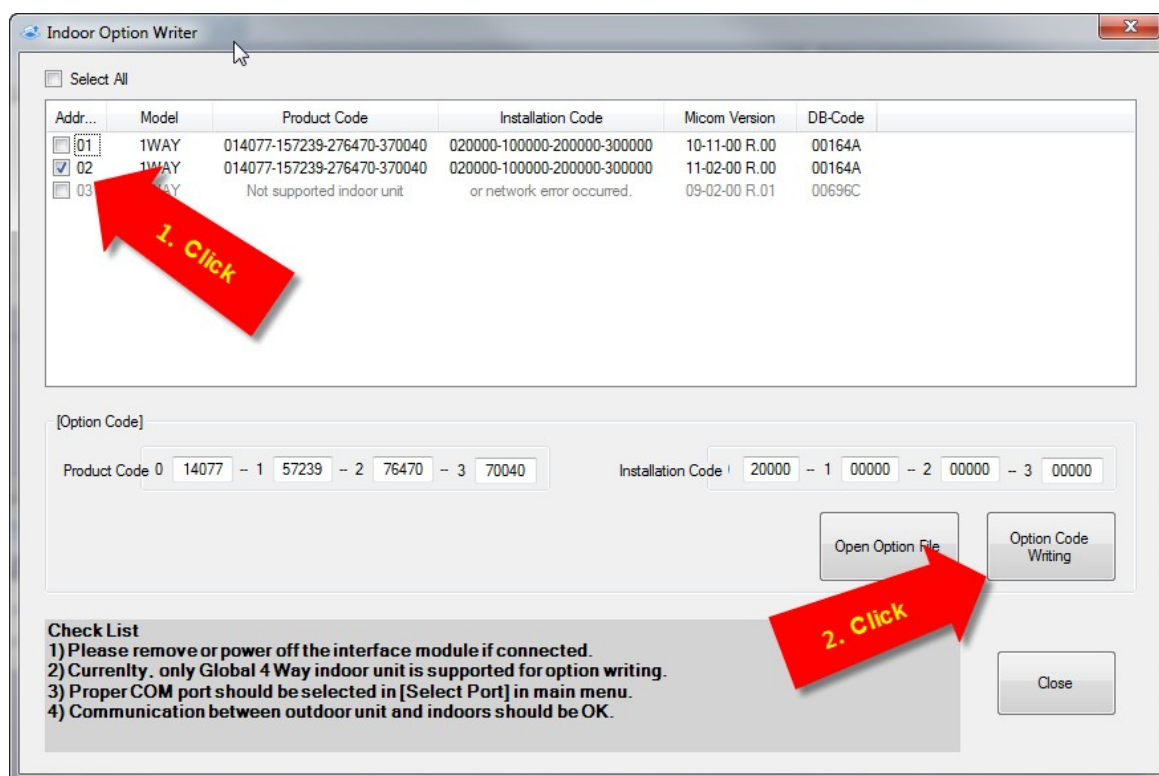
Writing option code

You can type option code directly on the input boxes. Also pre-setting codes can be imported from [Open Option File]. If you want to import pre-setting file,

1. Click [Open Option File] button. Select Option File(*.src) dialog will be displayed.
2. Select proper option file from this dialog.
3. Click [Open] in the dialog. pre-set option code will be imported on the input boxes.



If you want to type directly, please be careful that wrong code causes abnormal operation of A/C device. Read installation guide for more detail information for this option code. Valid input is 0~9 and A-F.



1. After input option codes, select indoor units on which the option codes will be written.

Unsupported indoor units can not selectable.

2. Click [Option Code Writing] for sending write operation. Be careful communication disconnection or dialog close before writing finish.

3.6 Refrigerant Detecting

For latest A/C models, you can check proper amount of refrigerant with this function. Currently supporting models are as follows.

Supporting models

- DVM+ 3/4

Entering refrigerant detection mode in A/C outdoor unit

1. Launch S-NET pro and connect to serial port with proper A/C model project
2. Set the A/C outdoor out switch to enter refrigerant detection mode. (Please refer technical manual)
3. When A/C enter refrigerant detection mode successfully, you can see "operate status" field value is changed "Ref. AutoDetect" in outdoor unit data window of S-NET pro. "Refrigerant Detect" button in Add-On ribbon menu is also enabled.

Opening "Refrigerant Detect" dialog

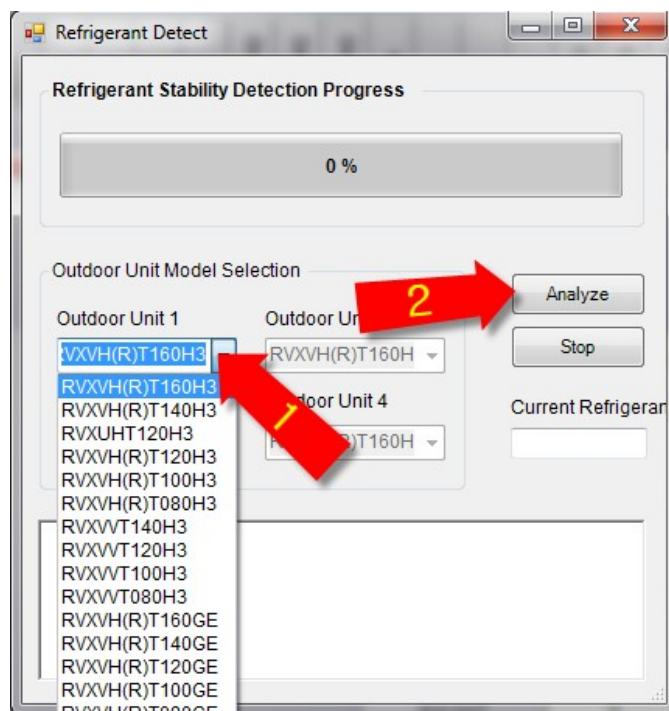
Click [Add-On] in ribbon toolbar. Select [Refrigerant Detect] button.



If A/C is not "Refrigerant detect mode", this menu button is not enabled.

Setting model and starting process

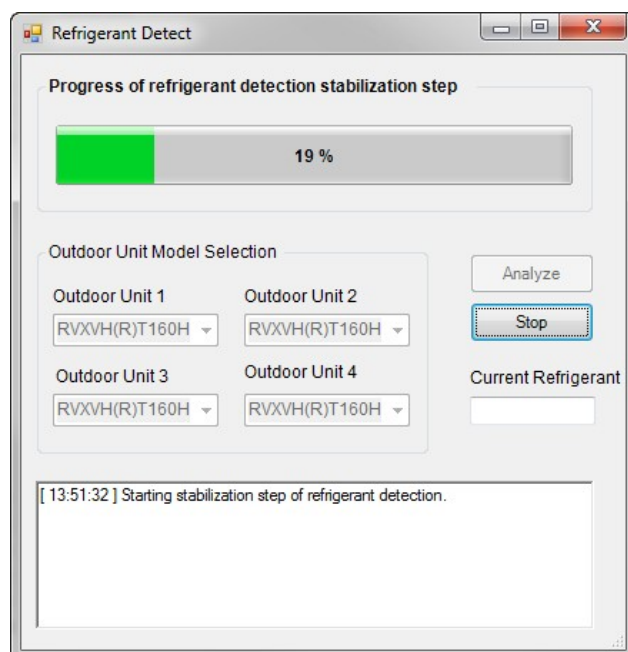
1. Select right A/C outdoor unit models. Selection box UI for installed sets are enabled.
2. Start detection by clicking "Analyze" button.



S-NET pro determines whether A/C is stabilized status in which this function is available for 3 minutes. If it is not stabilized, S-NET pro determines repeatedly until the user click stop button.

Detection refrigerant

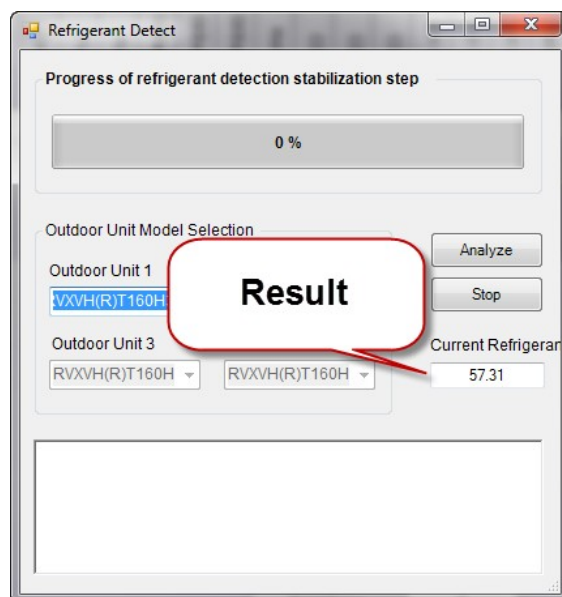
S-NET pro determines whether A/C is stabilized status in which this function is available for 3 minutes. If it is not stabilized, S-NET pro determines repeatedly until the user click stop button.



If it is determined to be a stabilized status, S-NET pro starts to detect the amount of

refrigerant for 1 minute.

Displaying result



You can see the result from "Current Refrigerant" Field.

3.7 Viewing Auto Inspection Result

For auto inspection supporting model, please complete auto inspection function in A/C outdoor unit. For running auto inspection, refer the technical book.

Supporting models

- DVM+ 4 series

Viewing auto inspection result

S-NET pro should be serial connected for this function.

For auto inspection supporting supporting model, please complete auto inspection function in A/C outdoor unit. For running auto inspection, refer the technical book.

Click "Auto Inspection Result" button in Add-On menu. "Outdoor Run Test Result" dialog will be popup.

