NETIMPRESS air

CAN Flash Programmer
&
Logger
Start-up Manual
(For Programmer)

DTS INSIGHT Corporation

Publication History

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INTRODUCTION

NEIMPRESS air Start-up Manual (For Programmer), (hereinafter “this manual”) describes basic steps from installing software to starting a programming.

Before configuring the programming environment by using NETIMPRESS air, read this manual carefully.

Display screen images of Windows 7 environment are used in this manual. Display screen image and operating procedures may vary if you are using other environment.

The wording “Programming” in this manual means writing data into a target microcomputer flash memory or an external flash memory connected to the target microcomputer.

Meaning of Icons

The following table describes the meaning of icons used in this manual.

	It indicates very important information. Extra care should be taken when operating NETIMPRESS air series products.
	It indicates useful information and tips for operation.
	It indicates references. Please see the referenced chapter of this manual and other manuals, if you needed.

Glossary

Word	Meanings
SD card for NETIMPRESS air	Insert this SD card into a main unit. This SD card is necessary for operating the main unit. By installing object files and other necessary files into a YIM folder in the SD card, you can operate NETIMPRESS air as a stand-alone.
Micom-pack	Package of a parameter file etc. which supports specific MCU. It can be available from our website. Micom-pack file is a compressed file (ZIP format). Contents of Micom-pack: Parameter file (.PRM), manuals (.PDF), programming control program (.BTP), and read me file etc. (It may vary depending on the MCU)
Buffer memory	NETIMPRESS air has a buffer memory whose memory map is same as the programming target MCU in the each YIM folder of SD card. Data in this buffer memory is programmed when you are programming the flash memory of MCU.
Definition program	MCU-specific program to communicate each MCU. This is placed in the each YIM folder in the SD card. Some parts of the definition program are consisted from parameter. You can change it by using NETIMPRESS air Connect. (To use the definition program, you need to install definition license in each SD card.)
Object file	This is a program/data file to program a flash of MCU. NETIMPRESS air supports the binary, Intel HEX, and Motorola S format.
Programming control program	Software for rewriting the flash memory on MCU. NETIMPRESS air communicates with a boot program of MCU, and downloads data to RAM of MCU. The programming control program (extension .BTP) has to be in the YIM folder in the SD card.
WCP	This is an abbreviation of Write Control Program.
BTP file	It means a programming control program file (extension .BTP).
Current file	Current file means a file name of currently loaded object data. File name of the current file is set when downloading the object.
AMK file	AMK file is a file for sending a specific ID code, which does not vary depending on the object data, to MCU which has a security function. AMK file is included with the Micom-pack. The file format is Motorola S, which comes with an encrypted address and dummy data (FF). The data can be changed by using a file generator (AZ481).

Contents

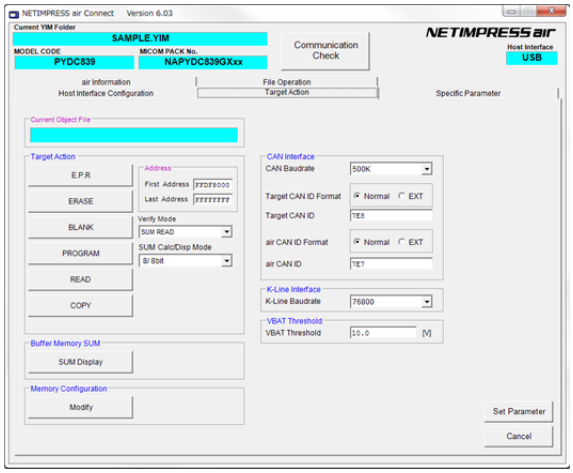
1. Overview and Features

This chapter describes the overview of NETIMPRESS air series, composition of the programming environment, and necessary operating procedures for starting the programming.

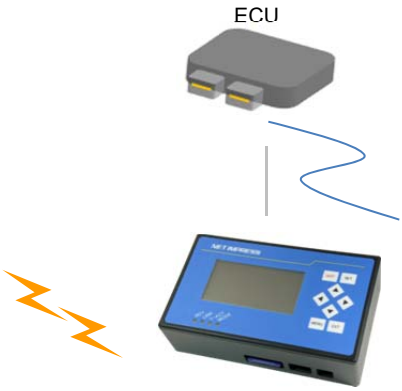
1.1. Overview of NETIMPRESS air series

NETIMPRESS air is a compact CAN Flash Programmer & Logger tool that you can use for ECU development, evaluation, and field services. Since NETIMPRESS air is equipped with USB, you can run and control it via USB of PC. Moreover WLAN model (/W model) is equipped with Wireless LAN, therefore you can operate it in wireless environment.

NETIMPRESS air can operate by an electrical power (12V) provided by in-car battery. Therefore you can do a programming and logging by using NETIMPRESS air as a stand-alone operation (without PC).



NETIMPRESS air Connect



NETIMPRESS air

By adding a firmware (definition file) for programming each microcomputer into the SD card for NETIMPRESS air main unit, it can support various devices.

It can also save the logging data in the SD card by adding a license for logging.

If you install AZ990 (Programming software) and AZ992 (Logging software) on PC, you can set programming/logging conditions via USB or WLAN.

Setting conditions are stored in the SD card. Therefore you can use it as a stand-alone (without PC).

SD card for NETIMPRESS air	● SD card which contains programming firmware data for microcomputer. Programming for each device can be supported by inserting the SD card into NETIMPRESS air. ● You can add the programming target devices by adding a license. ● SD card is empty with factory setting. Please make sure to add a license before operation. ➥ For how to add a definition license, see Chapter 4.1 “Adding the definition license”. ● For MCU which is same series as the MCU supported by one license, it can be supported by adding a MICOM-pack provided by YDC. ➥ For details of Micom-Pack, see Chapter 4.3 “Downloading the each setting file”.

Make sure to use SD card provided by YDC. If you use other SD cards, it may result in failure.
(Commercial-release SD card is not available)

1.2. Communication environments

USB can be used for communication between a host PC and NETIMPRESS air. For /W model, wireless LAN is also available.

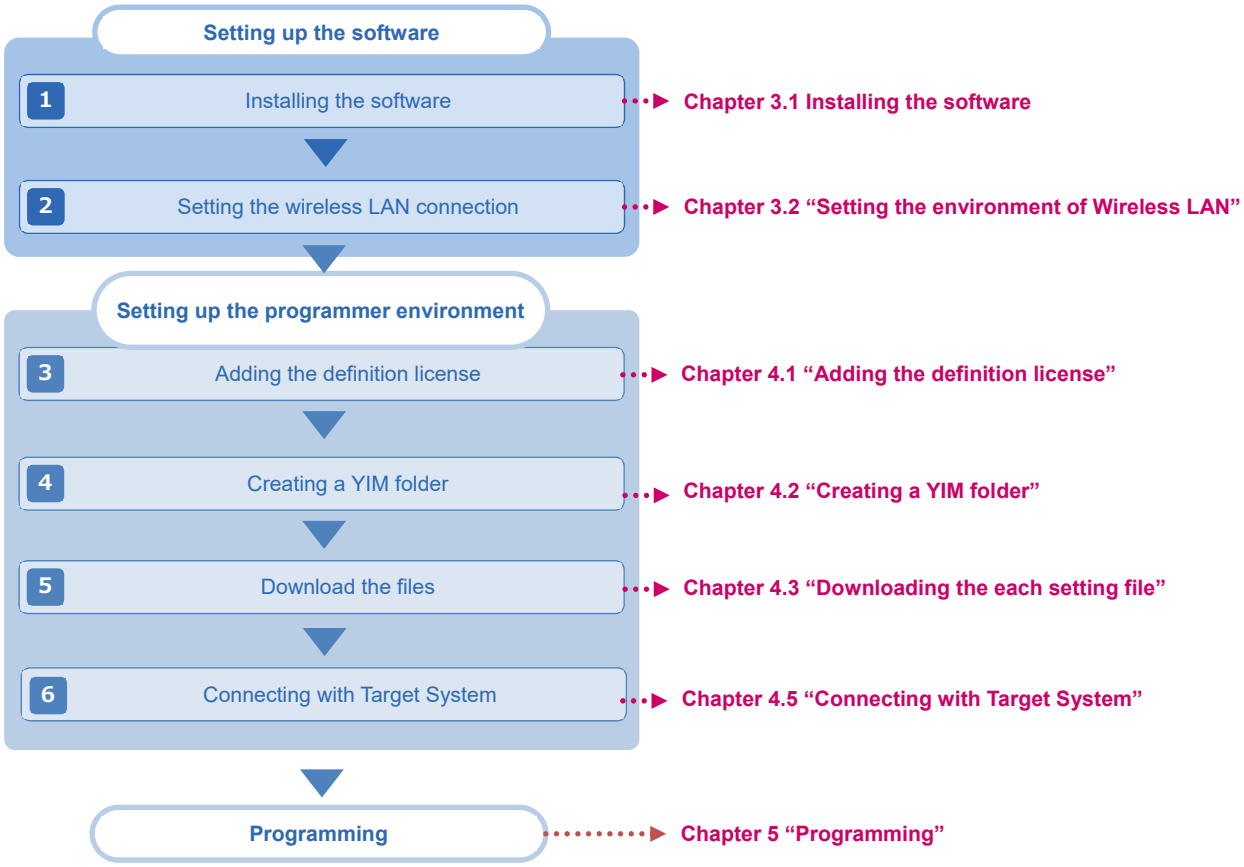
Specific driver is necessary for USB.

For wireless LAN, an access point or a host PC connectable by wireless LAN is necessary.

1.3. How to Start Programming

This chapter describes basic steps from installing software to starting a programming.

If you need to know the detailed setting procedure, see each referenced manual.



2. Check the Hardware/Software component (For Basic configuration)

2.1. Hardware

- NETIMPRESS air main unit (Model name: AF930 or AF930/W)
- USB cable (accessory of NETIMPRESS air)
- SD card for NETIMPRESS air (Model name: FX900)
- Target Probe

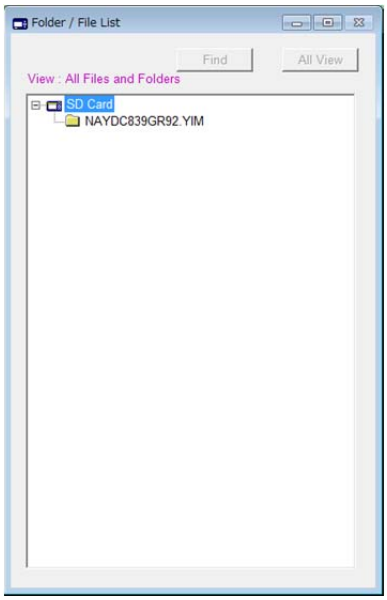
  This varies depending on the target environment.
- Host PC

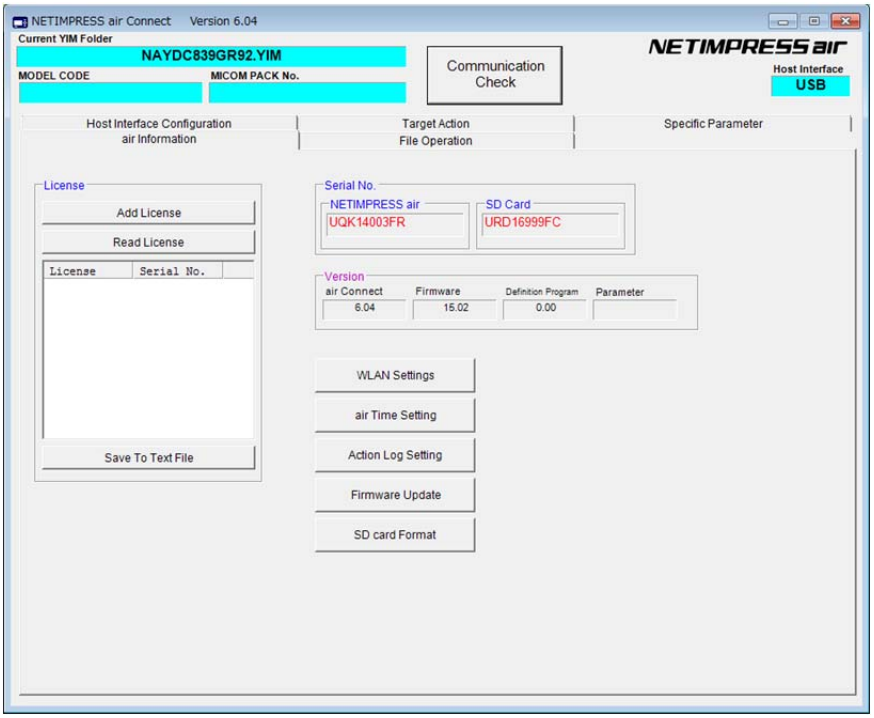
  Windows OS (Windows 7/Windows 10 32bit/64bit) is supported.

Make sure to use USB cable provided with NETIMPRESS air.

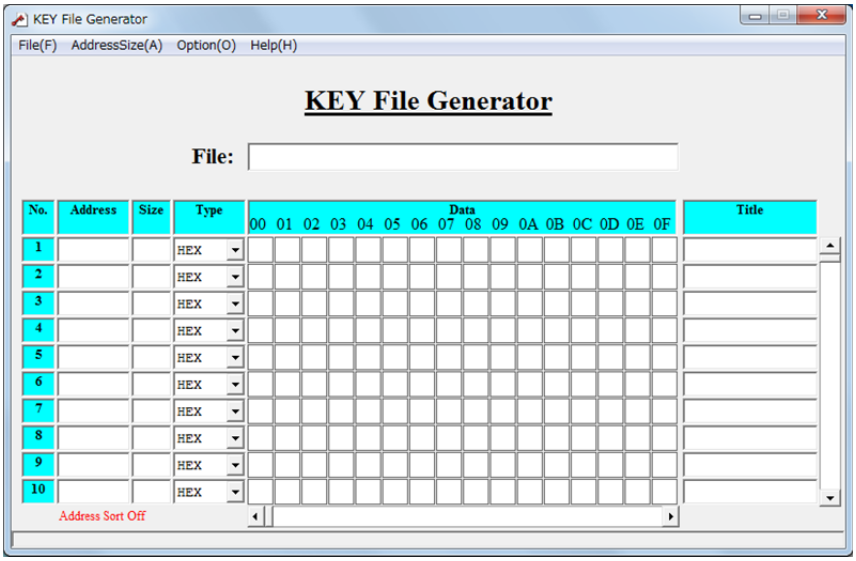
2.2. Software

- AZ990 (air Connect)
  AZ990 is used for downloading files, executing the device function, and setting parameters.





- AZ481 (KEY file generator)
  AZ481 is used for generating a KEY file (file for checking the security of device), and creating a YSM file (file for checking SUM value of object).



3. Setting up the software

3.1. Installing the software

Following software are used for configuring the programming environment.

- AZ990 (air connect)
- AZ481 (KEY file generator)

Software is available from our home page.

Download them from the link below.

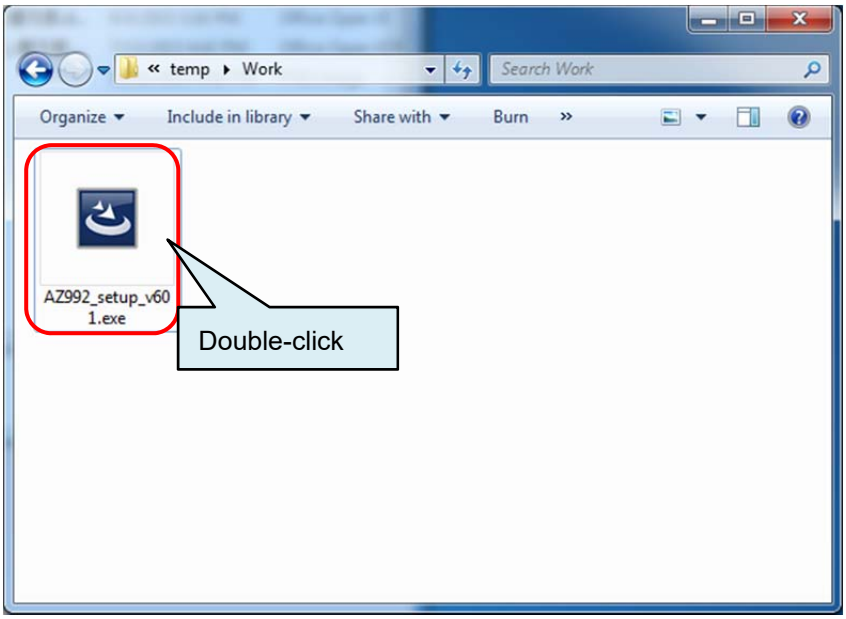
https://www.dts-insight.co.jp/en/support/support_netimpress_air/?m=Document&item=1

Extract the file onto the host PC, and then install it. After the completion of installation, an icon is created on the Windows [Start] menu – <All programs> - <DTS INSIGHT Tools>.

For details of supported OS and other installation conditions for each software, refer to “NETIMPRESS air Operation manual (For Programmer)” and “Instruction manual of AZ481 Key file generator file creation tool” (AZ481mnE*nn*.pdf). (*nn* stands for a revision of manual.)

3.1.1 How to install AZ990 (air Connect)

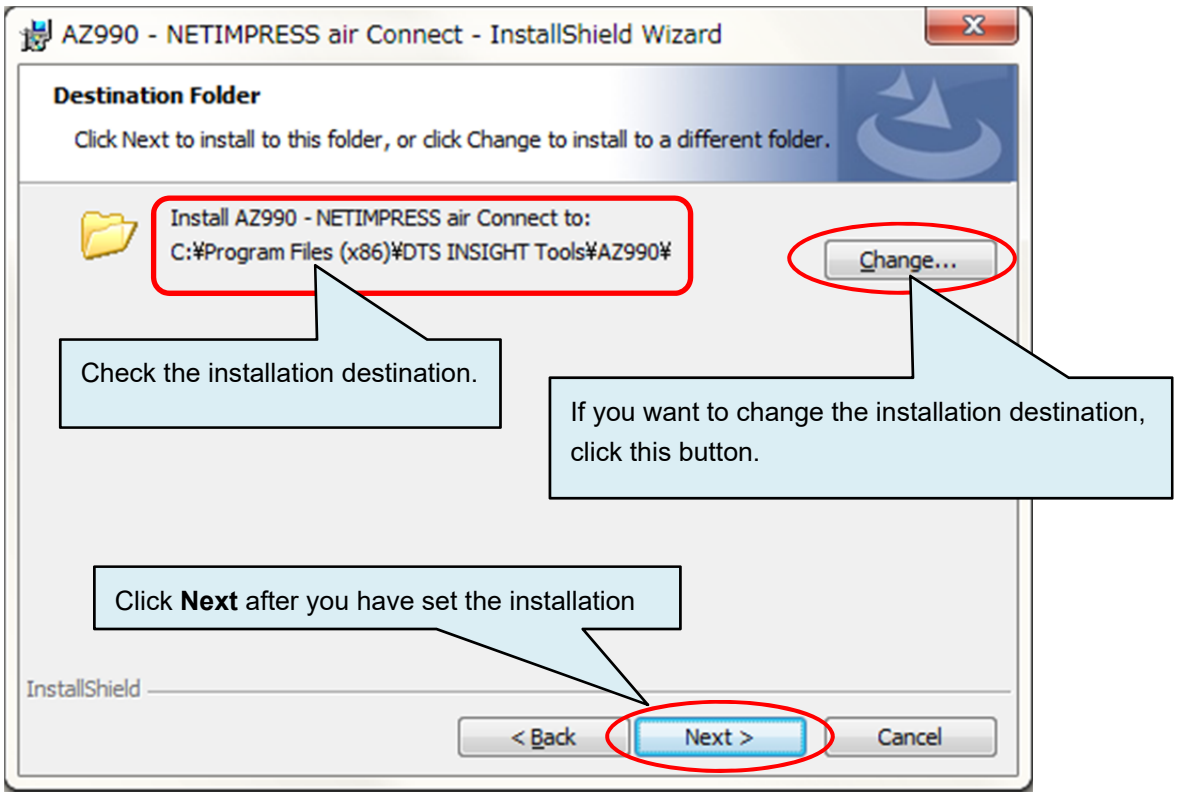
(1) Double-click the downloaded installer (AZ990_setup_vXXX.exe) (XXX varies depending on the version) to start installation.



(2) Install AZ990 (air Connect) by following the instruction of installer.

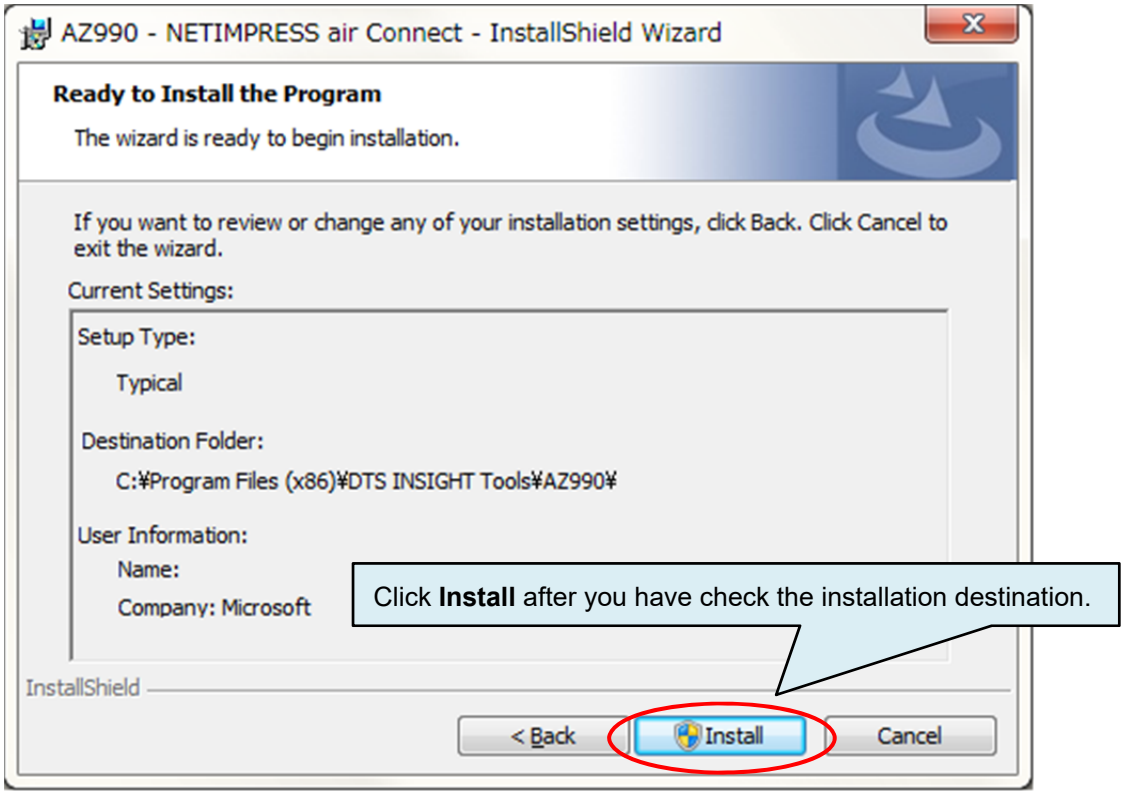
Check the installation destination, and then click the **Next** button.

If you want to change the installation destination, click the **Change** button.



(3) Check the installation settings, and then click the **Install** button.

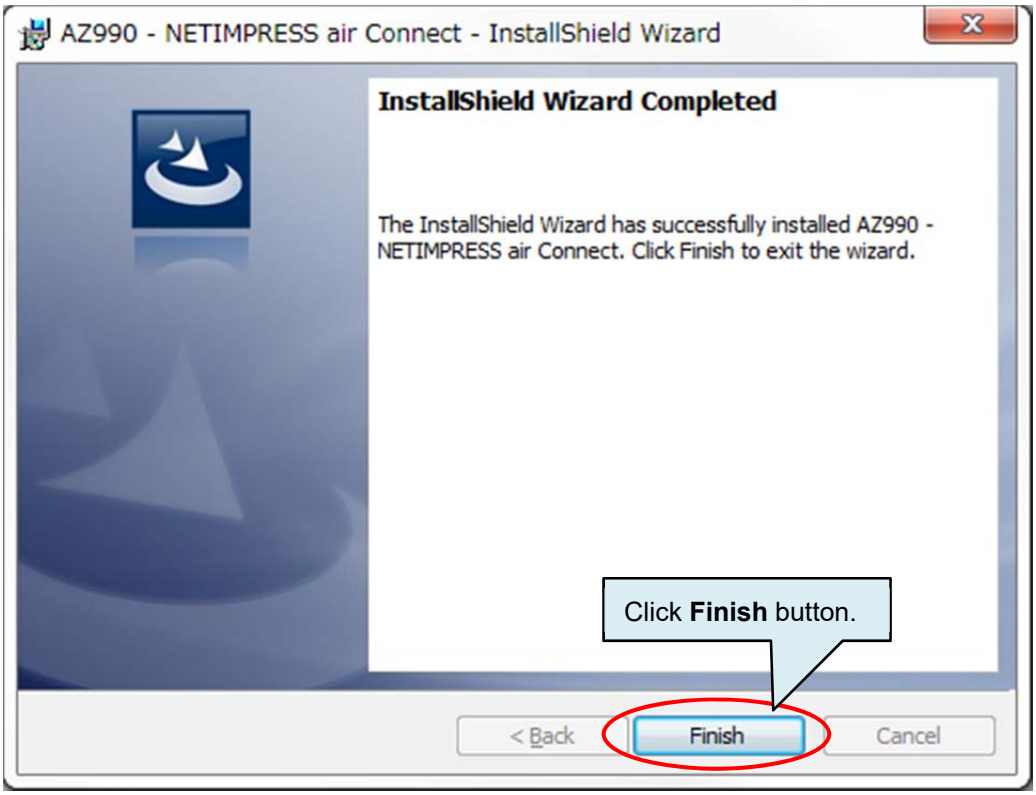
If a User Account Control window opens, click **Yes** to continue the installation.



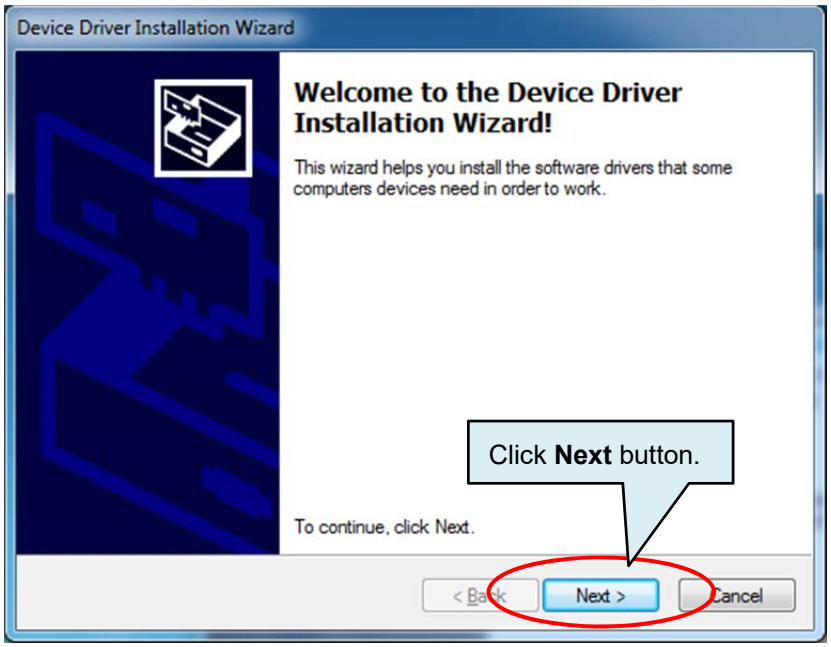
(4) Installation of AZ990 (air Connect) is completed when the following window is displayed.

Following this, installation of USB driver is started when you click **Finish** button.

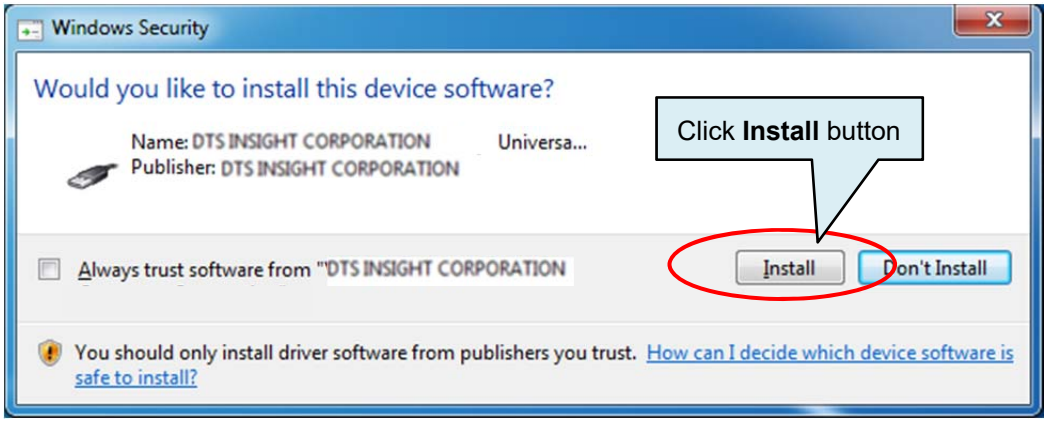
If a User Account Control window opens, click **Yes** to continue the installation.



(5) Click **Next** button.

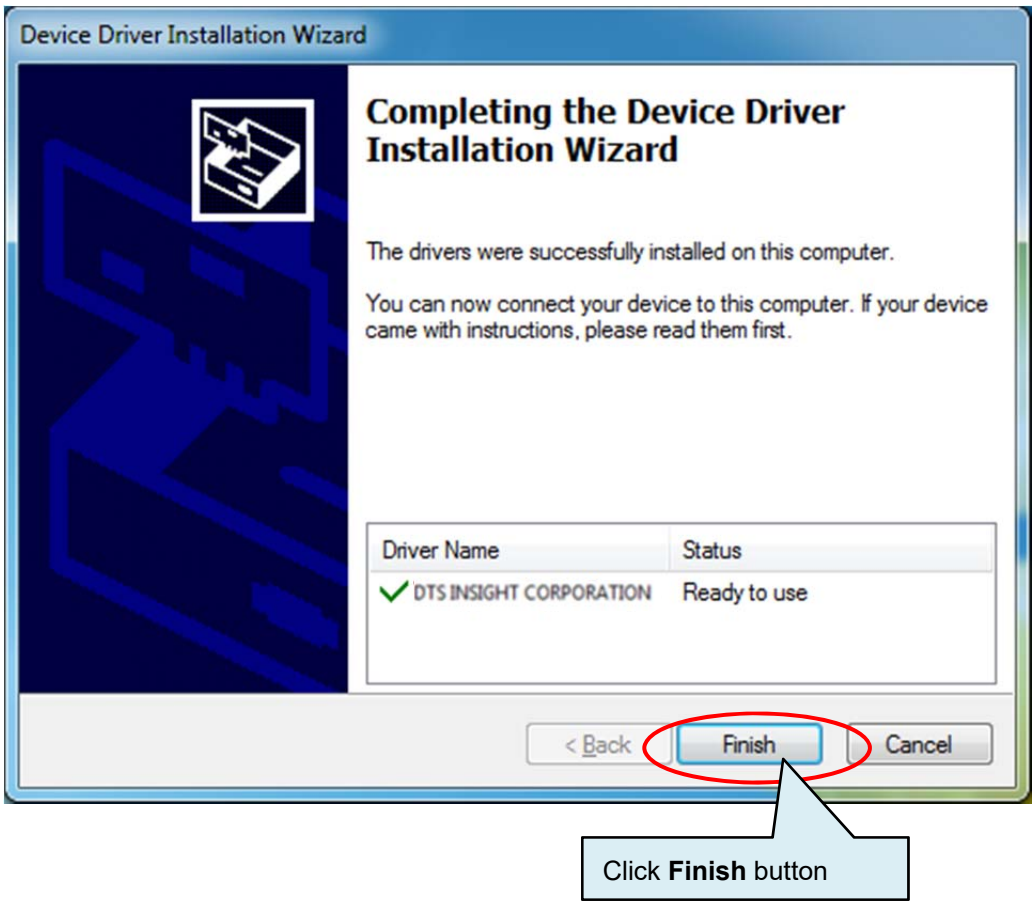


(6) Click **Install** button



(7) Installation of USB driver is completed when the following window is displayed.

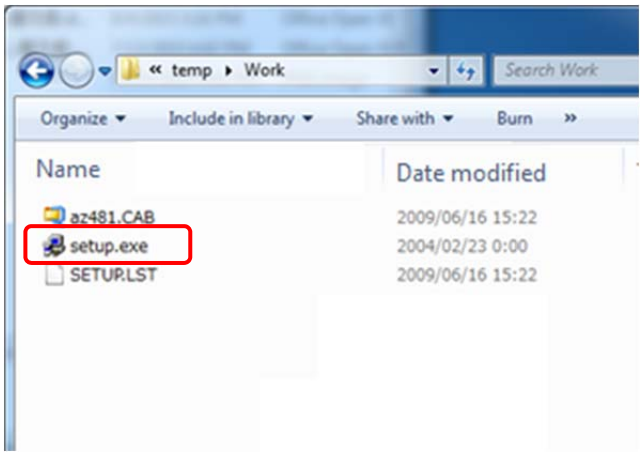
Click **Finish** button.



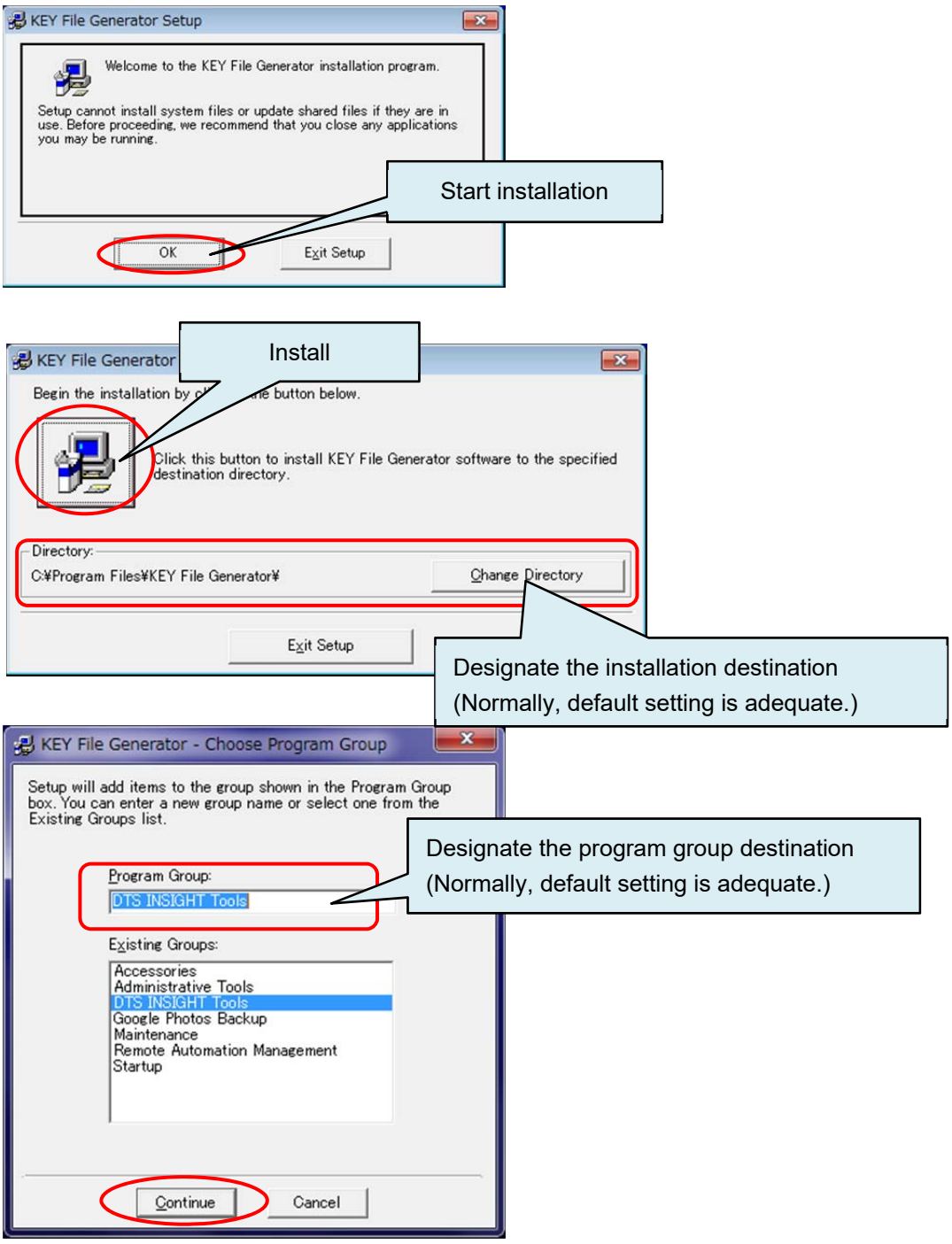
3.1.2 Installing AZ481 (Key file generator)

(1) Extraction Zip file (az481_*nnn*.zip) (*nnn* varies depending on the version) ..

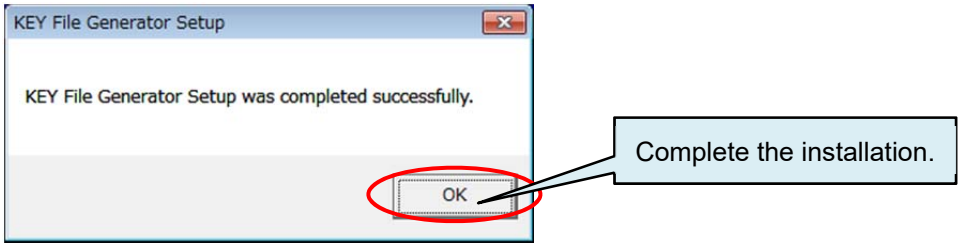
(2) Open the extracted folder and double-click the installer (setup.exe) to start the installation.



(3) Install AZ481 (Key file generator) by following the instruction of installer.



(4) Installation is completed when the following dialog box is displayed.



3.2. Setting the environment of Wireless LAN

If you do not use wireless LAN, please skip Chapter 3.2.

3.2.1 Setting the wireless LAN connection

There are two types for wireless LAN. One is an infrastructure, a connection via access point (AP), and the other is an ad hoc, direct connection with PC.

(1) Insert SD card into NETIMPRESS air, and then connect NETIMPRESS air to PC by USB cable.

Make sure you installed AZ990 (air Connect) before connecting USB cable. For details on how to install it, see Chapter 3.1.1 “How to install AZ990 (air Connect)”. USB driver is installed together with AZ990.

The power of NETIMPRESS air is supplied via USB. Therefore, if you use it under the wireless LAN environment, power supply from the target (battery) via a target probe is necessary.

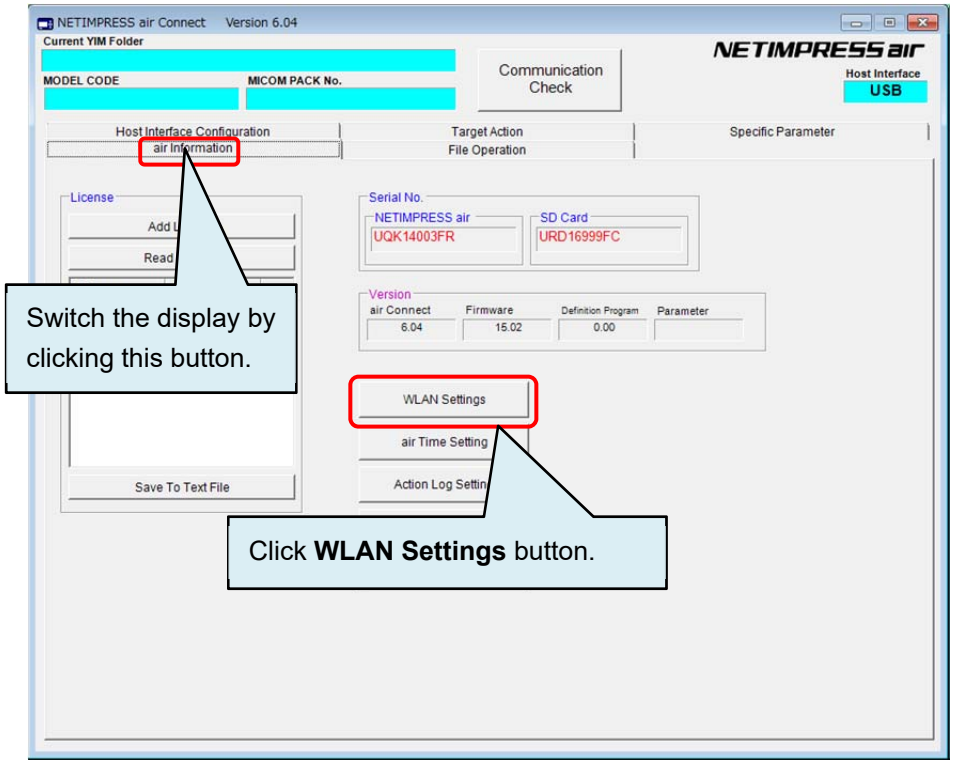
If “sd card not detected” message is shown on the LCD of NETIMPRESS air, disconnect the USB cable once, and check to make sure that SD card is fully inserted. If SD card is not inserted correctly, setting of NETIMPRESS air is not available.

(2) Start up the air Connect.

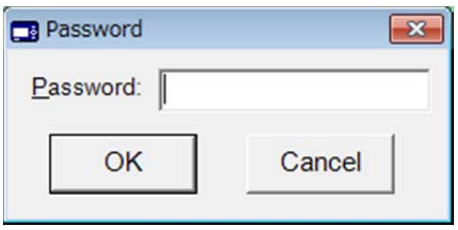
- Start up menu – All programs – YDC Tools – NETIMPRESS air Connect.

(3) Open the setting window of the wireless LAN.

- Click the air information button to switch the display, and then click **WLAN Settings** button.



- The following window is displayed. Enter the password and then click the **OK** button.



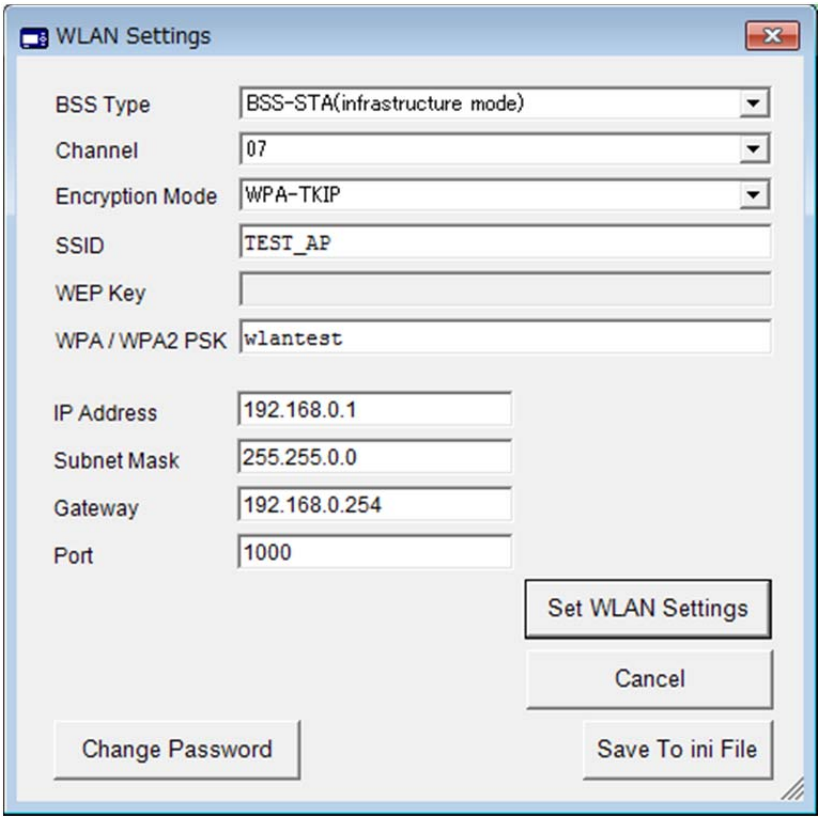
The default password is AF200. Password can be changed by clicking **Change Password** button on the WLAN Setting window.

- Change the setting of wireless LAN on the WLAN settings window, and then click **Set WLAN Settings** button.

<When connecting the existing access point>

BSS Type	Select “BBS-STA(infrastructure mode)”
Channel	Comply with the setting of access point (AP)
Encryption Mode	Comply with the setting of access point (AP)
SSID	Comply with the setting of access point (AP)
WEP Key	Comply with the setting of access point (AP)
WPA / WPA2 PSK	Comply with the setting of access point (AP)
IP Address	Set a value not overlapping with PC
Subnet Mask	Comply with the setting of PC
Gateway	Comply with the setting of PC
Port	Set 1000 normally.

Example:

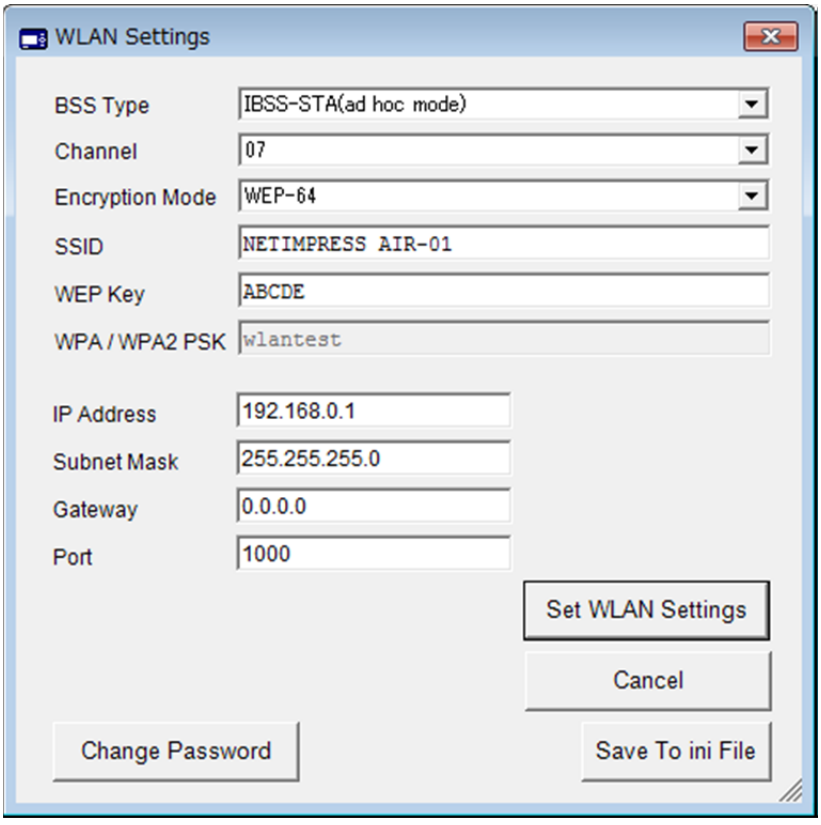


It connects to the existing access point if you click **Set WLAN Settings**.

<When connecting 1:1 with PC (ad hoc mode)>

BSS Type	Select “IBBS-STA (ad hoc mode)”
Channel	Set a value not used by peripheral AP.
Encryption Mode	Select the encryption mode. (Option) Select one of the **NONE**, **WEP-64**, or **WEP-128**.
SSID	Enter any SSID. Do not set a name used by peripheral AP.
WEP Key	Enter an encryption key for WEP-64/WEP-128. For WEP64, enter 5 alphanumeric characters. For WEP128, enter 13 alphanumeric characters.
WPA / WPA2 PSK	Do not change
IP Address	Normally, make the upper 24 bits of the IP address as same value of PC. Example: air 192.168.0.1 PC 192.168.0.2
Subnet Mask	Set 255.255.255.0 normally.
Gateway	Set 0.0.0.0 normally.
Port	Set 1000 normally.

Example:



It will wait for ad hoc connection when you click “**Set WLAN Settings**”.

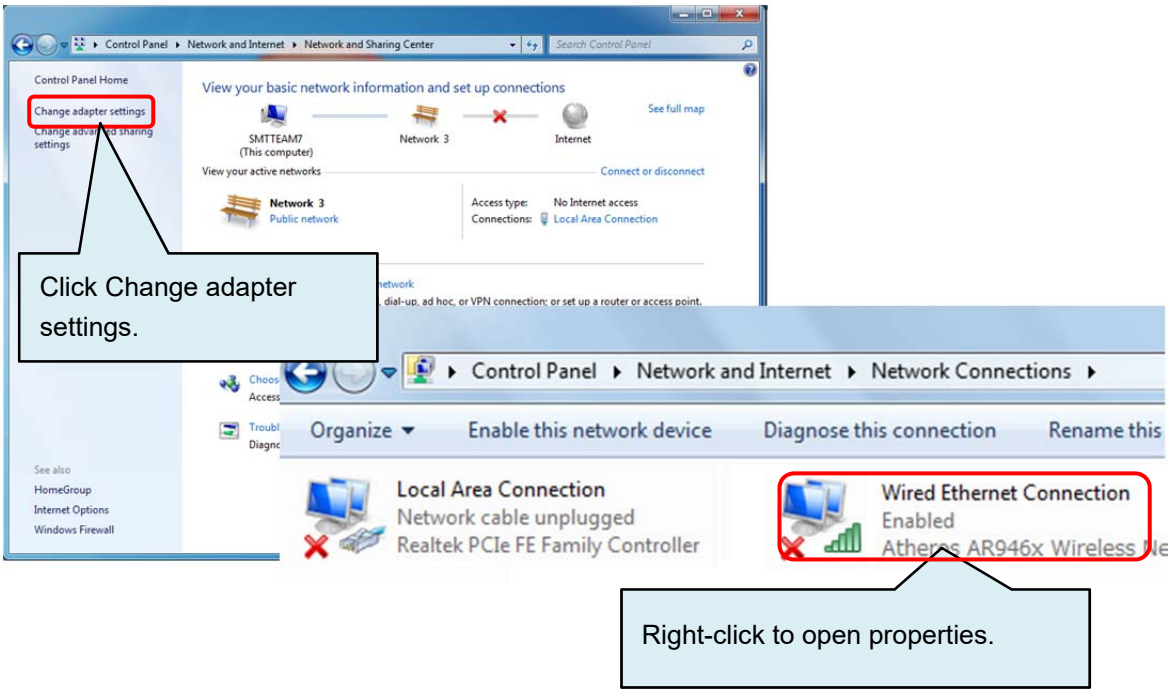
WPA-PSK and WPA2-PSK are not available for the encryption mode when ad hoc mode is selected.

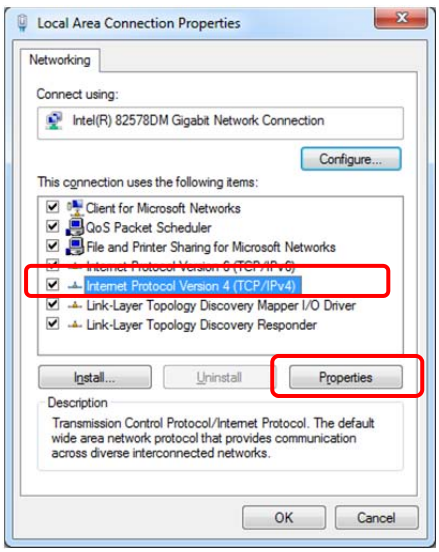
Make sure not to overlap IP addresses used by another devices connected to the same network or host PC.

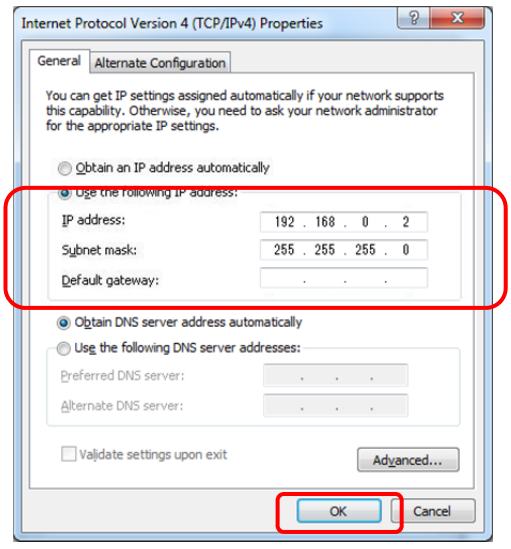
NETIMPRESS air does not support DHCP. If you use ad hoc mode, IP address on the PC must be a static IP address.
For example, if you set 192.168.0.1 as an IP address of NETIMPRESS air, please set 192.168.0.2 for IP address of PC.

<IP address setting of PC>

- Select **Control Panel** – **Network and Sharing Center**, and then click **Change adapter settings**.







3.2.2 Connecting PC (Setting of AZ990 (air Connect))

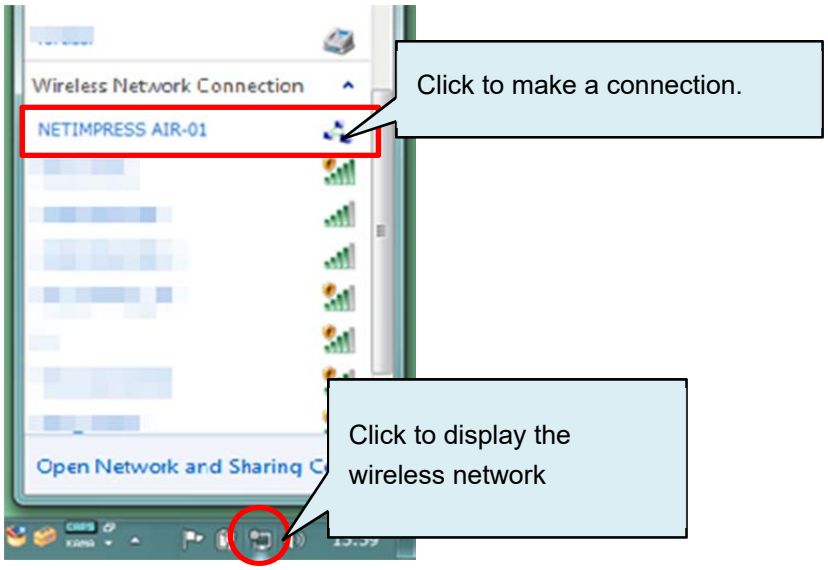
(1) Make the wireless LAN connection settings on PC.

<When connecting the existing access point>

Connect the existing access point. (You do not need to make any settings if it is already done.)

<When connecting 1:1 with PC (ad hoc mode)>

Select SSID you had registered at step 3 of Chapter 3.2.1.

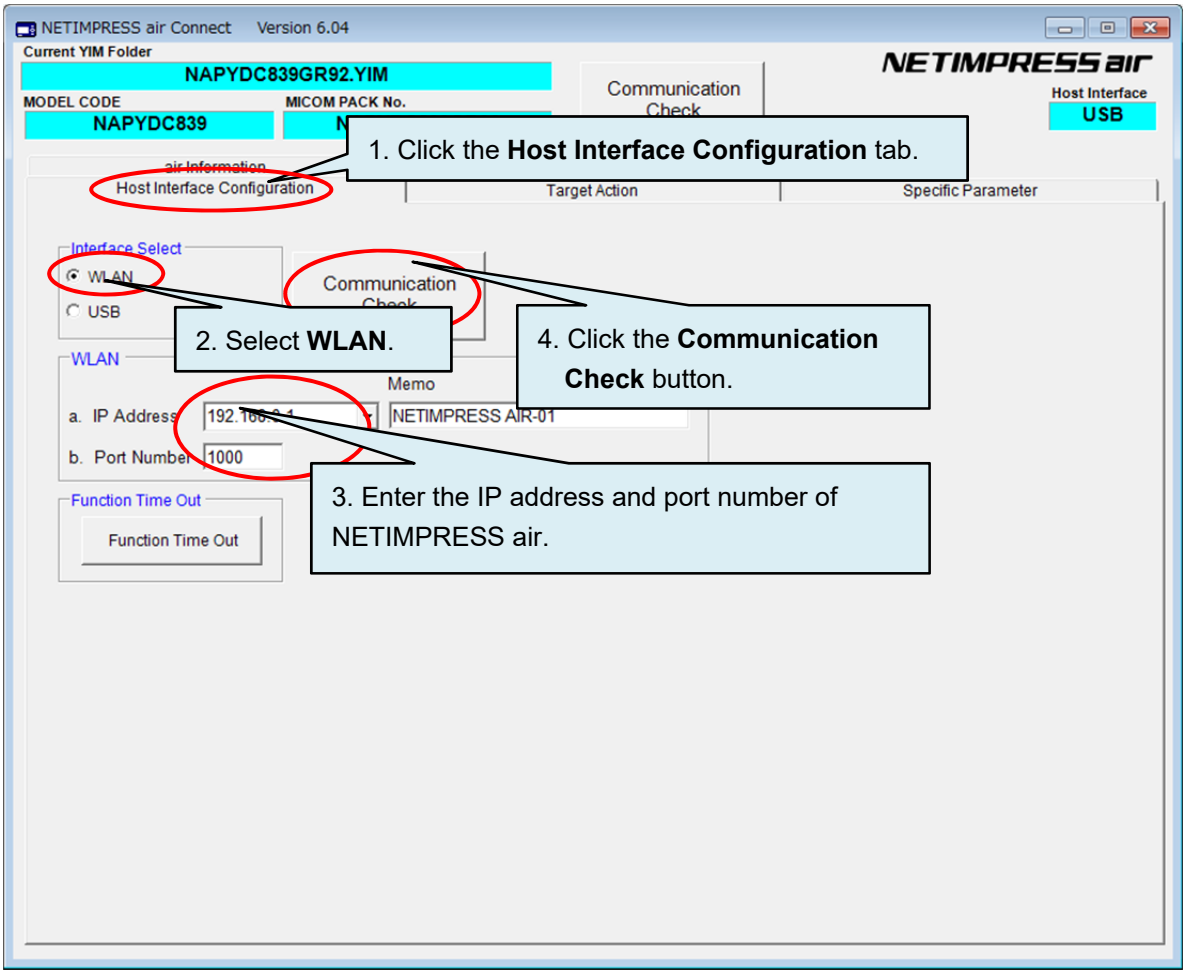


Configure the environment for controlling NETIMPRESS air from AZ990 (air Connect).

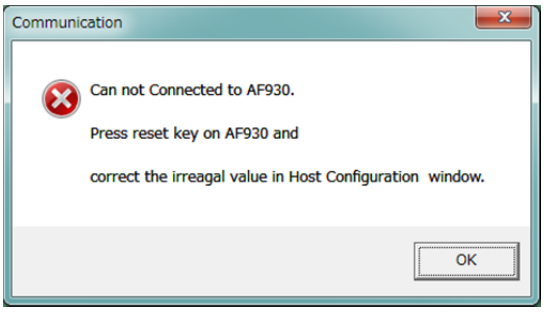
(2) Start up the AZ990 (air Connect) from host PC.

Start up menu – All programs – DTS INSIGHT Tools – NETIMPRESS air Connect.

(3) From the Host Interface Configuration tab, select **WLAN**, and then enter the IP address and Port Number of NETIMPRESS air.
Click **Communication Check** button.



If the following dialog window is shown because of the communication error, connection of host PC and NETIMPRESS air has not completed. Please check the connection settings again.



3.2.3 If an error occur during Wireless LAN connection

Is the setting of IP address correct?	● Check the IP address you have set for NETIMPRESS air. ➥ See Chapter 3.2.1 “Setting the wireless LAN connection”. ● Make sure not to overlap IP addresses used by another devices connected to the same network or host PC. ● If you set an ad hoc mode, and if the host PC automatically receives IP address (DHCP), you cannot connect NETIMPRESS air. You must set the IP address. For access point connection, IP address has to be set specifically if there is no DHCP server. ● Set the IP address for host PC and NETIMPRESS air based on the setting of subnet mask. If the subnet mask is 255.255.255.0, the upper 24 bits have to be common by host PC and NETIMPRESS air.
Is the setting of port number correct?	● Check the port number you have set for NETIMPRESS air. Enter “1000” (Default) if you did not make any changes. ➥ See Chapter 3.2.1 “Setting the wireless LAN connection”.
Subnet mask	● Default of subnet mask of NETIMPRESS air is 255.255.255.0. Set the subnet mask based on the setting of host PC. ➥ If you need to change it, see Chapter 3.2.1 “Setting the wireless LAN connection”.

4. Setting up the programming environment

4.1. Adding the definition license

To use a definition program for the target MCU of your programming environment, a definition license has to be added into the SD card for each definition program.

This license file (.ALC file) can be downloaded if you register your information in our website by referring to the license sheet provided when you purchased the definition program.

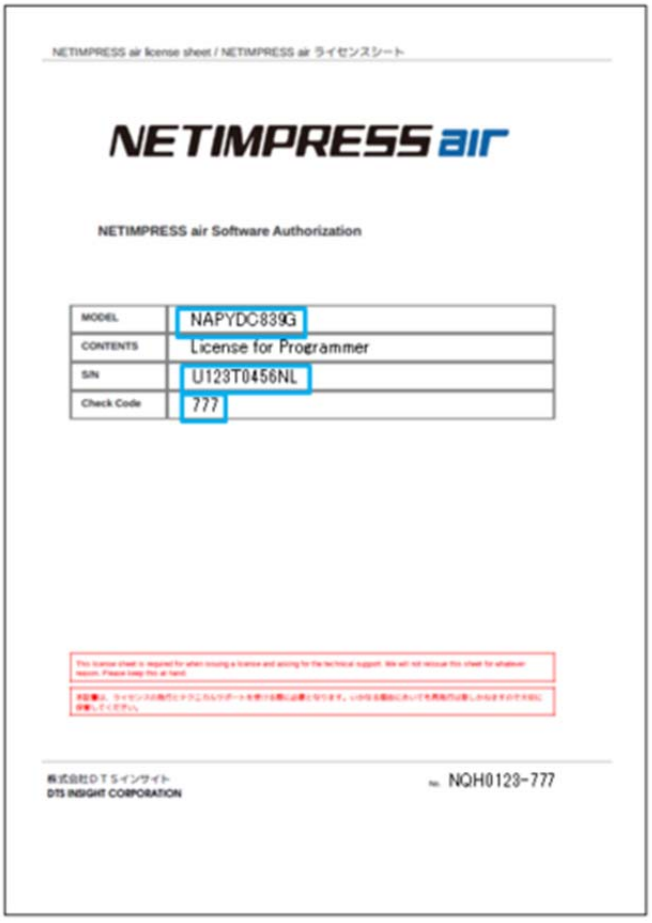
License file	● Extension of the file is .ALC. ● License file can be downloaded if you register your information in our website. https://www.dts-insight.co.jp/en/support/support_netimpress_air/ (License file is sent by Email after the registration is completed.)

4.1.1 How to acquire the license file

(1) Prepare a License sheet and SD card in hand.

The blue frame below will be necessary information when registering the product.

License Sheet


NETIMPRESS air license sheet / NETIMPRESS air ライセンスシート

NETIMPRESS air

NETIMPRESS air Software Authorization

MODEL	NAPYDC839G
CONTENTS	License for Programmer
S/N	U123T0456NL
Check Code	777

株式会社ＤＴＳインサイト
DTS INSIGHT CORPORATION

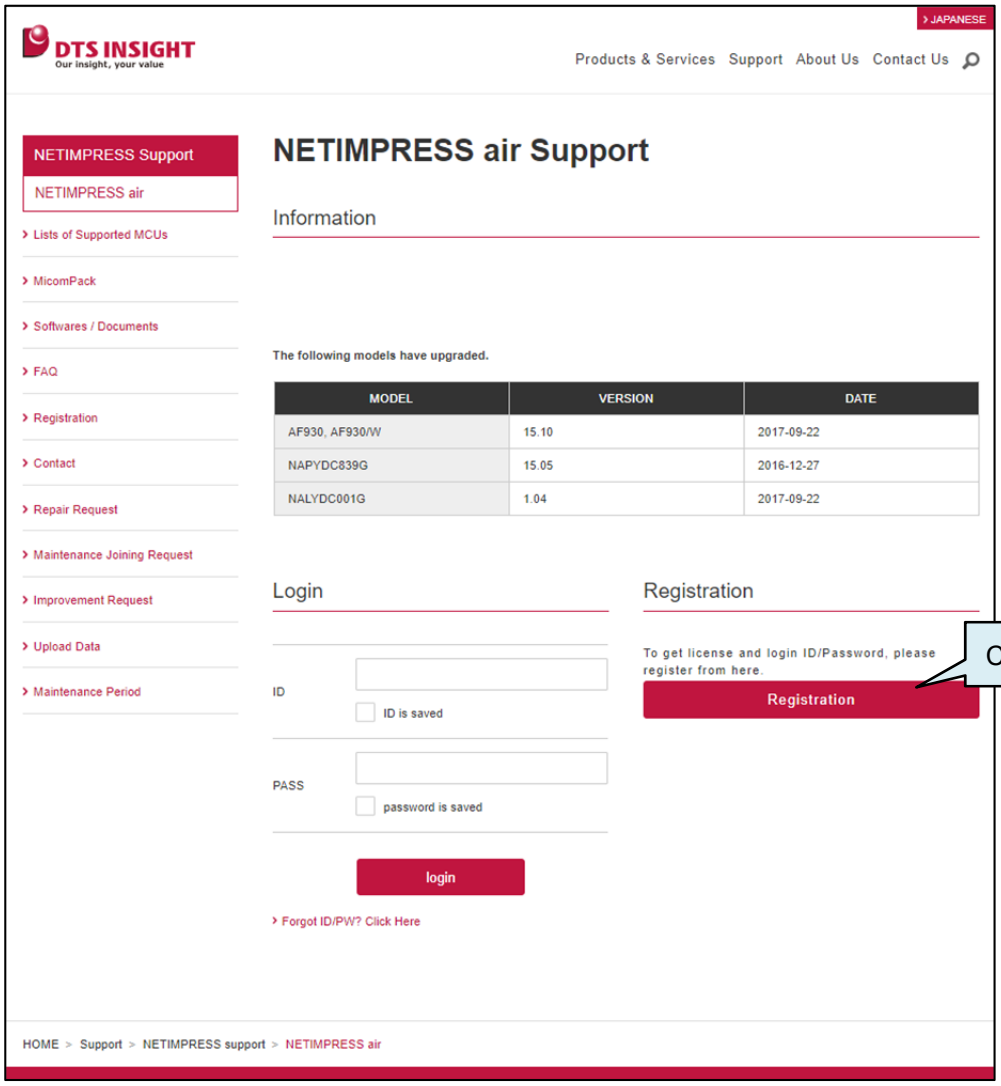
No. NQH0123-777

SD Card

(2)Access the NETIMPRESS air support WEB site.

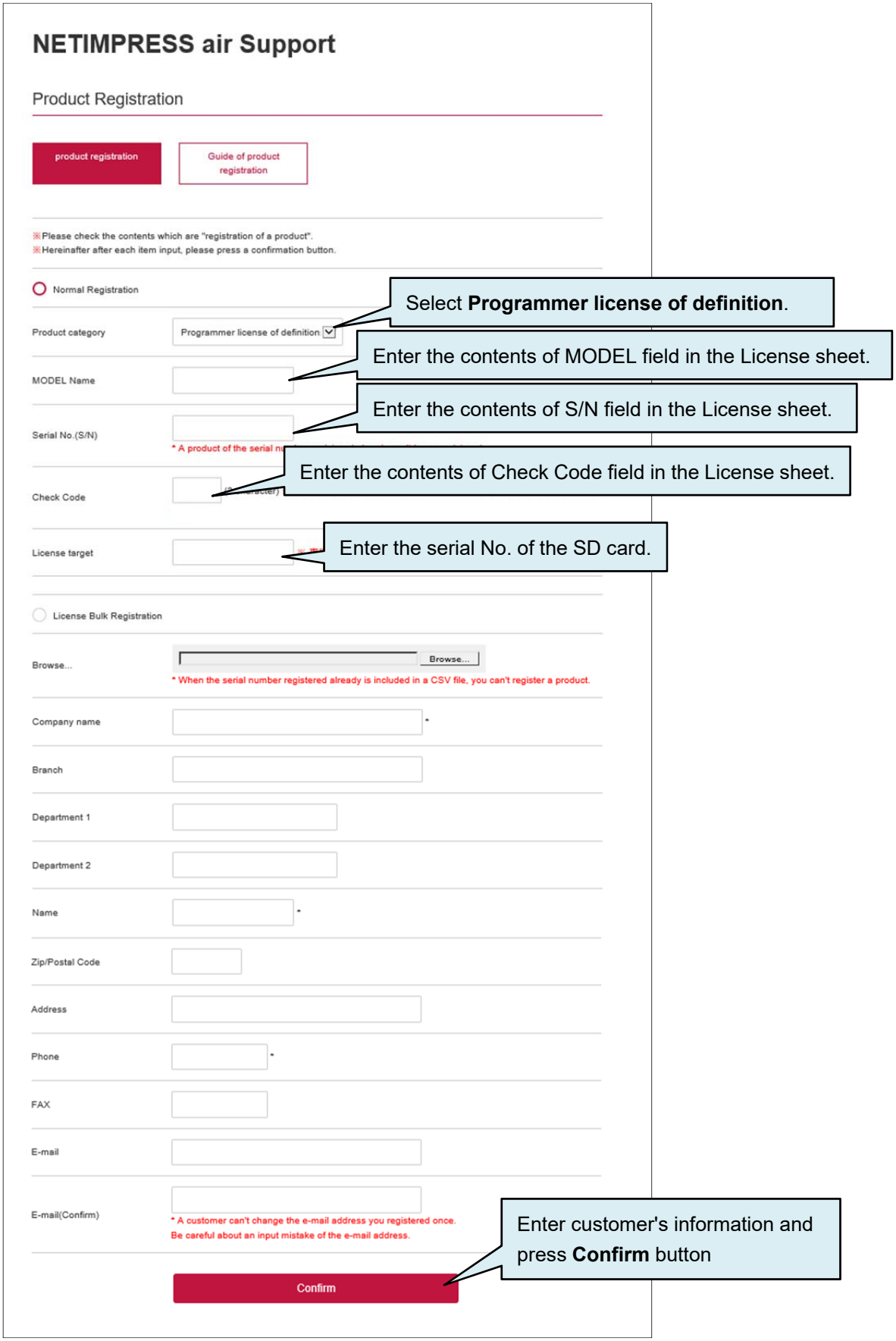
URL: https://www.dts-insight.co.jp/support_en/support_netimpress_air/

(3)Click the “Registration” and move to the product registration page.



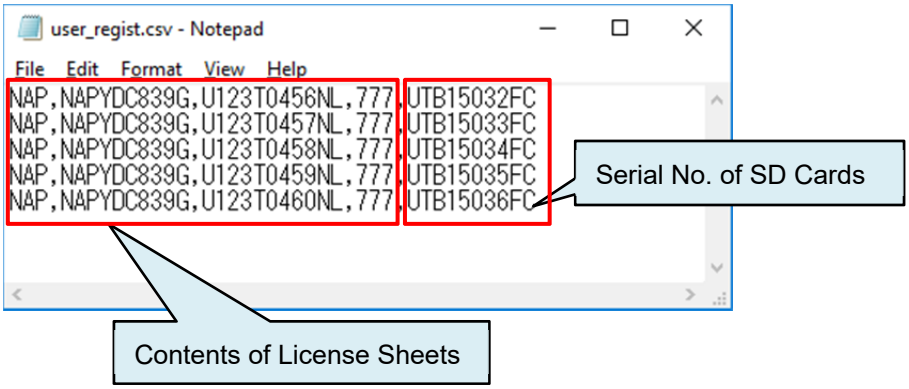
Click the Registration button

(4) On the Product Registration page, enter contents of license sheet, serial No. of SD card and customer information, press the "confirm" button. Confirm that there is no mistake in the confirmation screen display content, and carry out registration.



When registering products with multiple licenses, bulk registration using CSV files is convenient.

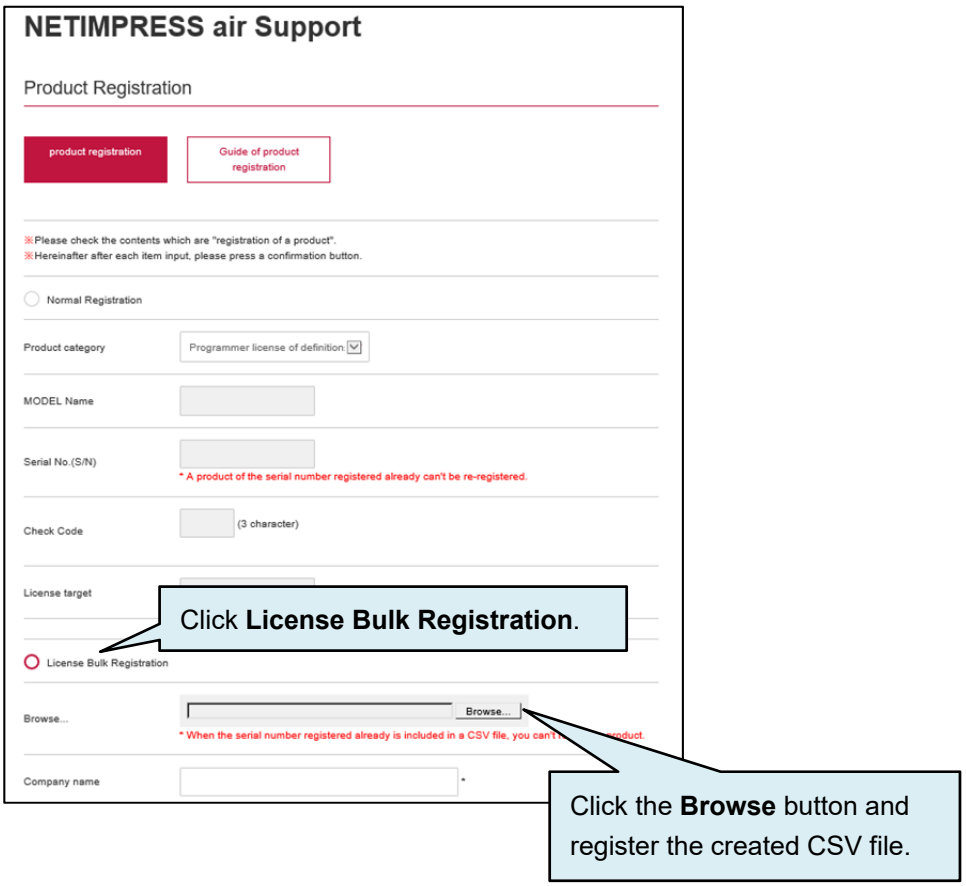
- Create a CSV file for batch registration with a text editor



- Description of CSV file (Multiple product categories can be mixed in the CSV file.)

Product Category	Description
NETIMPRESS air main unit	NAH,MODEL,Serial No.,,
Definition Program	NAP,MODEL,Serial No.,Check Code,Serial No. of SD Card
Micom Pack	NAM,MODEL,Serial No.,Check Code,
Logger License	NAL,MODEL,Serial No.,Check Code,Serial No. of NETIMPRESS air main unit

- How to specify a CSV file with multiple license registration

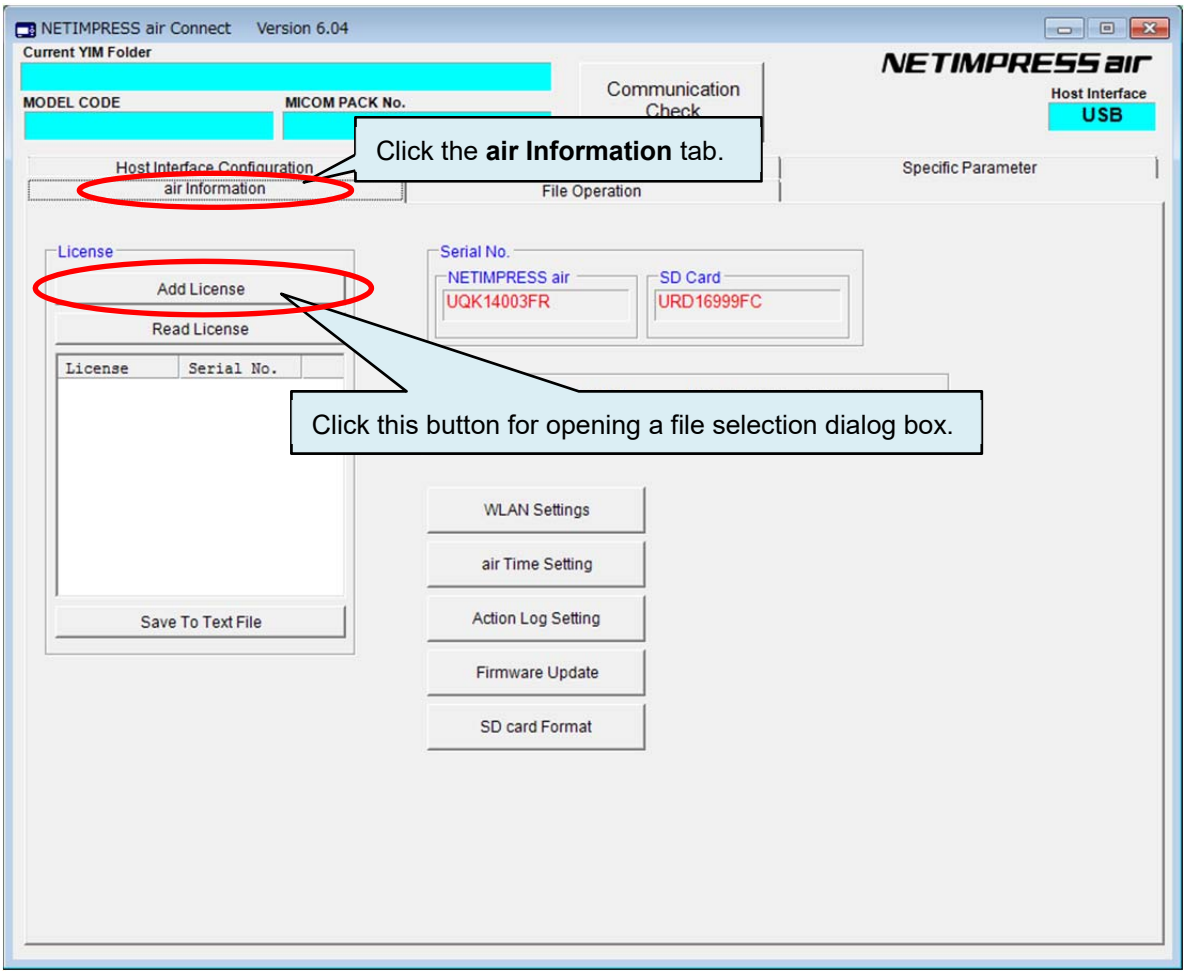


4.1.2 How to add the license into SD card for NETIMPRESS air

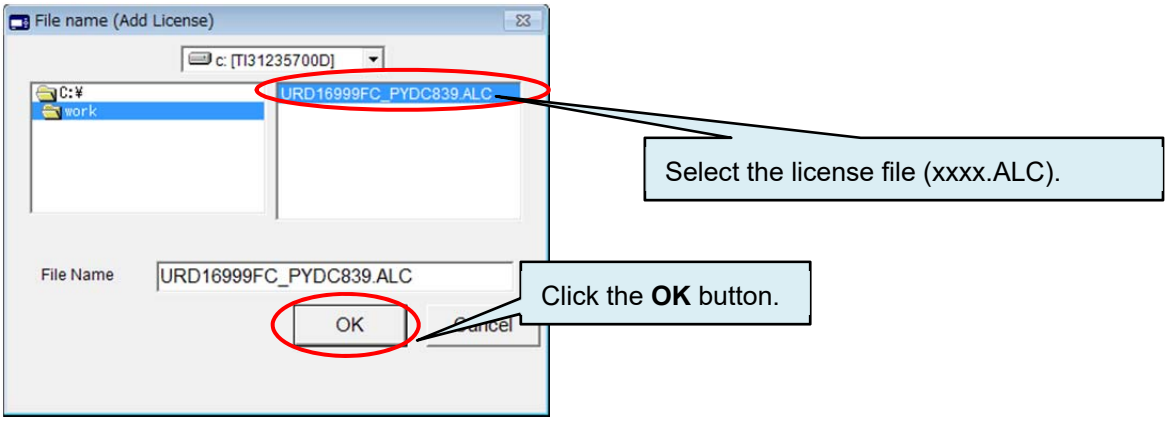
(1) Copy and paste the license file (.ALC) into the local folder of host PC.

(2) Start up AZ990 (air Connect) and connect NETIMPRESS air.

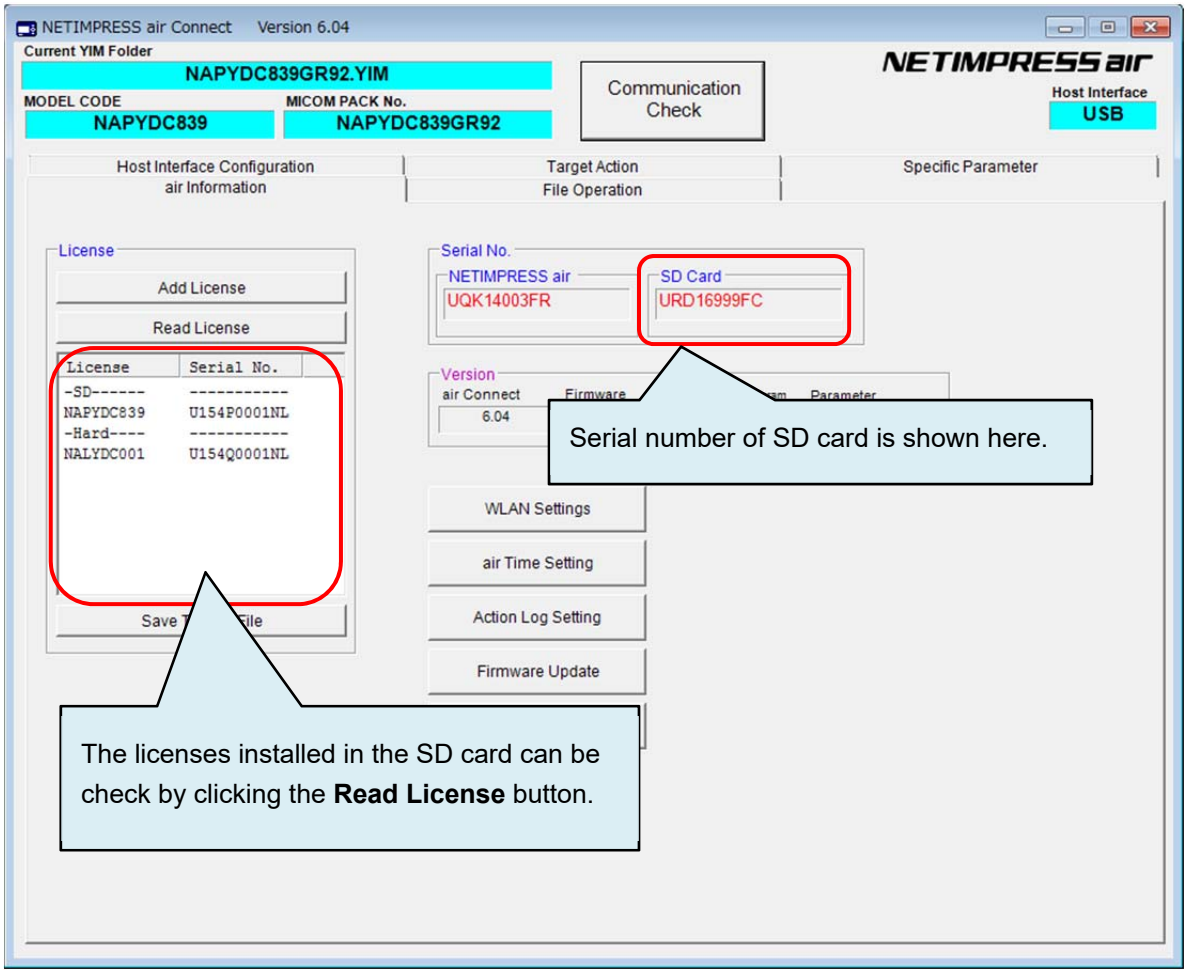
(3) Click the **air Information** tab
Click the **Add License** button to open a dialog box for selecting a license file.



Select the license file prepared in (1) above, and then click the **OK** button. The license is registered.



License file is fixed to the serial number of SD card for NETIMPRESS air.
If the serial number of license file and the serial number of SD card are not matched, the license cannot be added.



For stand-alone operation, you can check the license information and serial number of SD card by following steps below.

- View License: MENU:LICENSE “READ LICENCE”
- View the serial number of the SD card: MENU:VER/SERIAL “READ SERIAL NUMBER”

4.2. Creating a YIM folder

By using a batch download, you can cover the steps on Chapter 4.2 to 4.3 (Except the parameter settings) at once. If you want to use the batch download, see Chapter 4.4 “Batch Download”.

Settings of the programming object and programming environment are managed in YIM folder (extension .YIM) in the SD card.

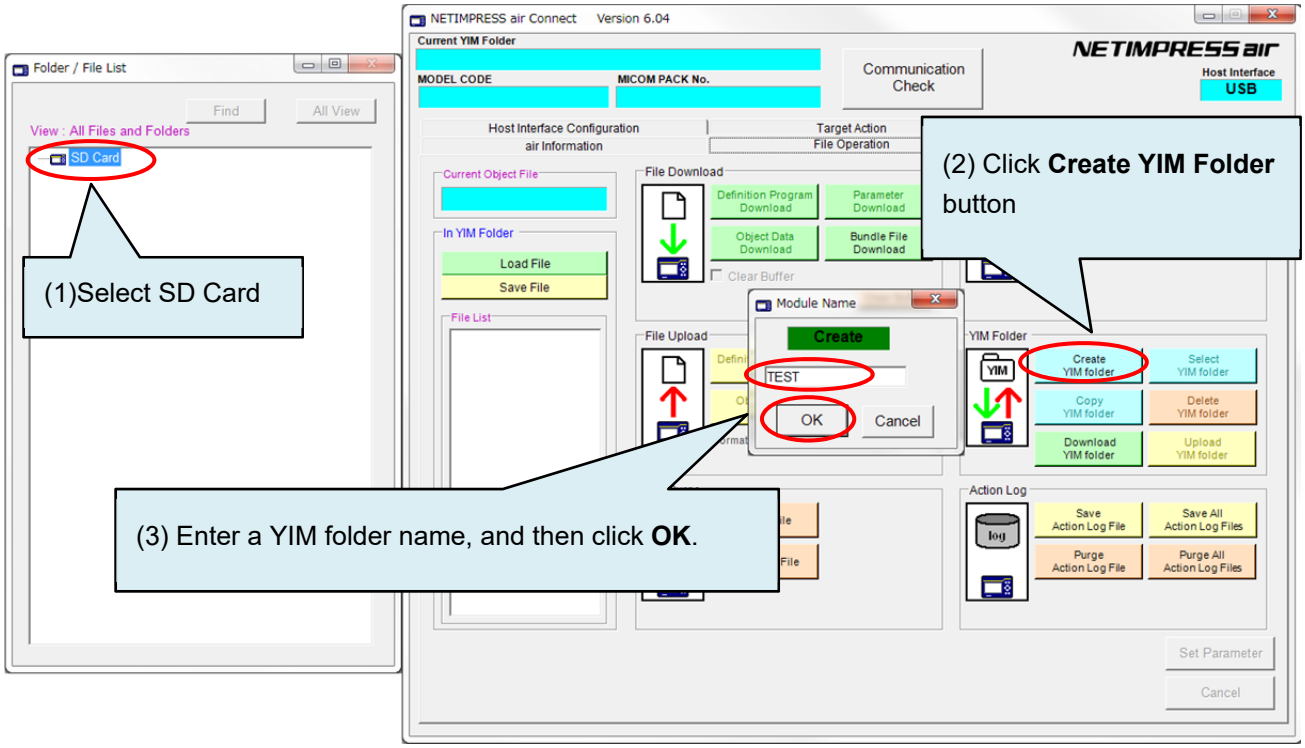
After you added the license, create a YIM folder and set the programming environment.

YIM folder	● Extension of the folder is .YIM. ● Manage the programming environment of the SD card for NETIMPRESS air. More than one environment can be registered in the SD card (It is up to the size of memory.)

For details of YIM folder, see Chapter 7 “YIM folder”.

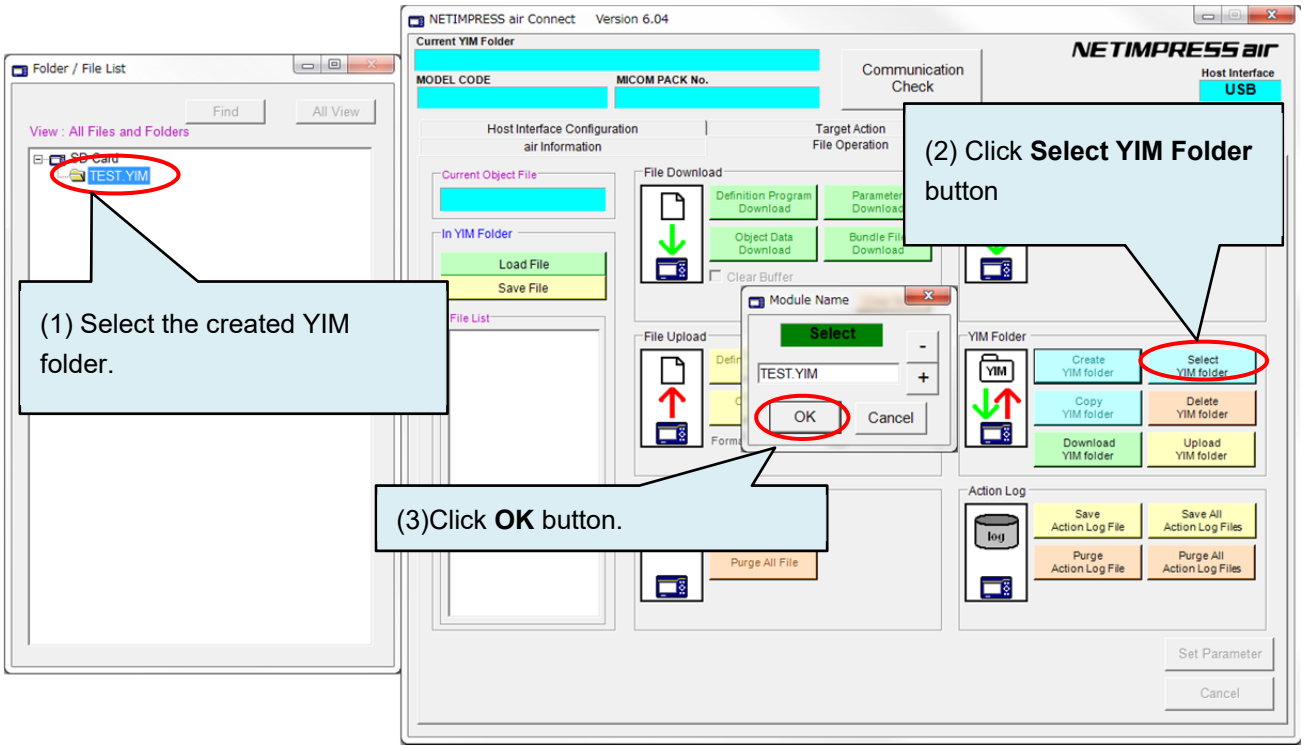
(1) Select “**SD card**" listed in the Folder/File List of AZ990 (air Connect).

(2) Click “**File Operation**” tab of the main window.
Dialog box for setting a YIM folder name will be shown if you click “**Create YIM Folder**” button. Enter the name and then click **OK** button.



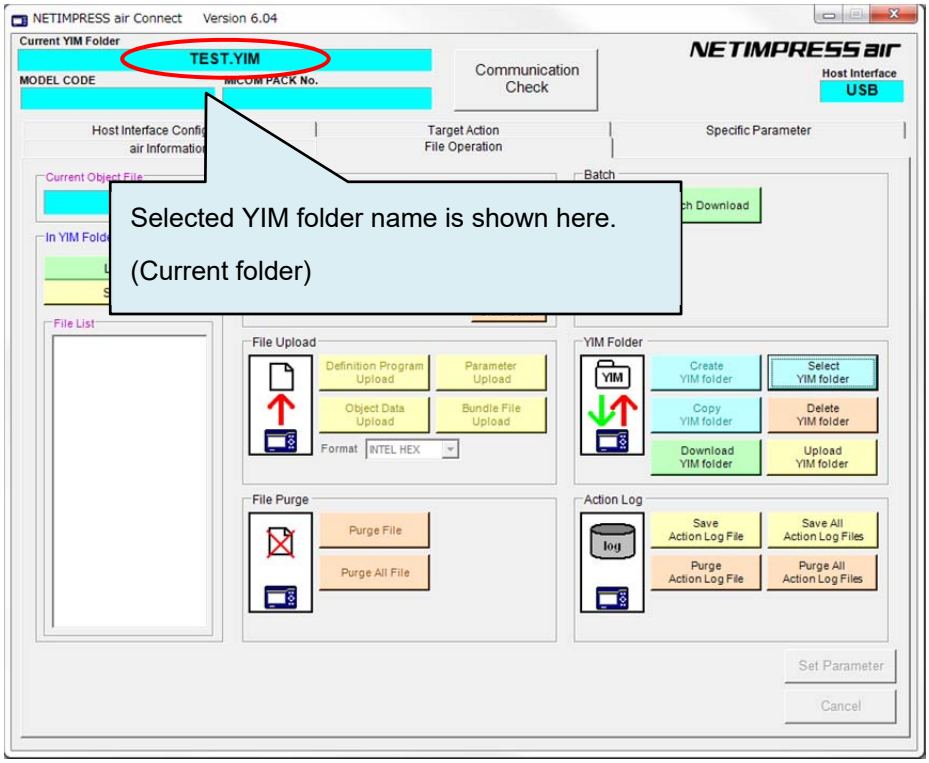
YIM folder can also be created by right-clicking **SD card** listed on the Folder/File List window, and then select **Create YIM Folder**.

(3) Created folder is shown on the Folder/File List window.
Select the created YIM folder, and then click **Select YIM Folder** button on the main window.
Click **OK** button when the folder confirmation window is shown.



YIM folder can also be selected by double-clicking the created folder on the Folder/File List window.

(4) YIM folder you have selected at Step 3 will be a current folder. The YIM folder name is shown on the top of window.



Current folder	● YIM folder for executing the device function and loading each file ● If you load the setting files into the SD card for NETIMPRESS air, those are stored in the current folder.

4.3. Downloading the each setting file

Download the programming environment setting file into the current folder.

Prepare the definition file (extension .CM) and each Micom-pack file. Definition file and Micom-pack can be downloaded from our website.

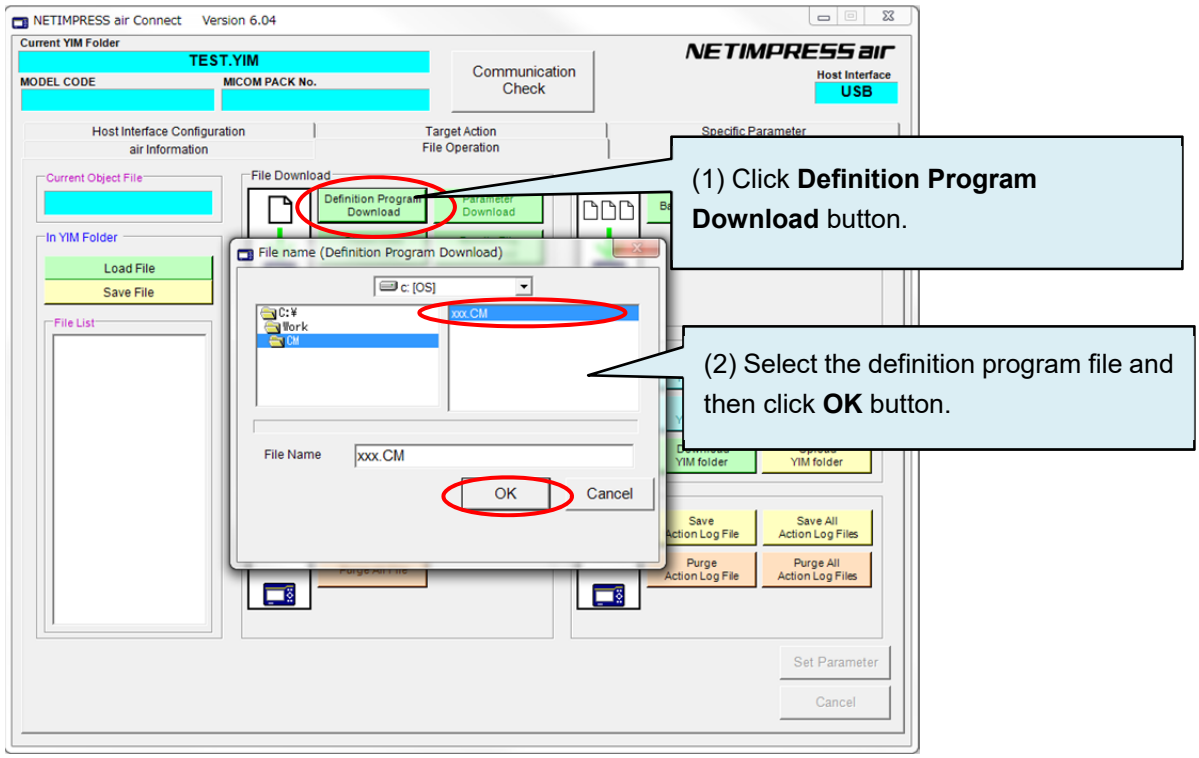
http://www.yokogawa-digital.com/support/support_netimpress_air/

Micom-pack	● File for setting the programming environment for each MCU. ● Please download it from our website. (Registration and login will be necessary for downloading.) ● Micom-pack file is a compressed file (ZIP format). You can extract the file by double-clicking it. ● More than one file is included in the Micom-pack. Contents of Micom-pack are a parameter file (.PRM), manuals (.PDF), programming control program (.BTP), and read me file etc.(It may vary depending on the MCU)

4.3.1 Downloading the definition file

For downloading the definition file, click "**Load Definition Program**" on the "Control Module" group on the "File Operation" tab.

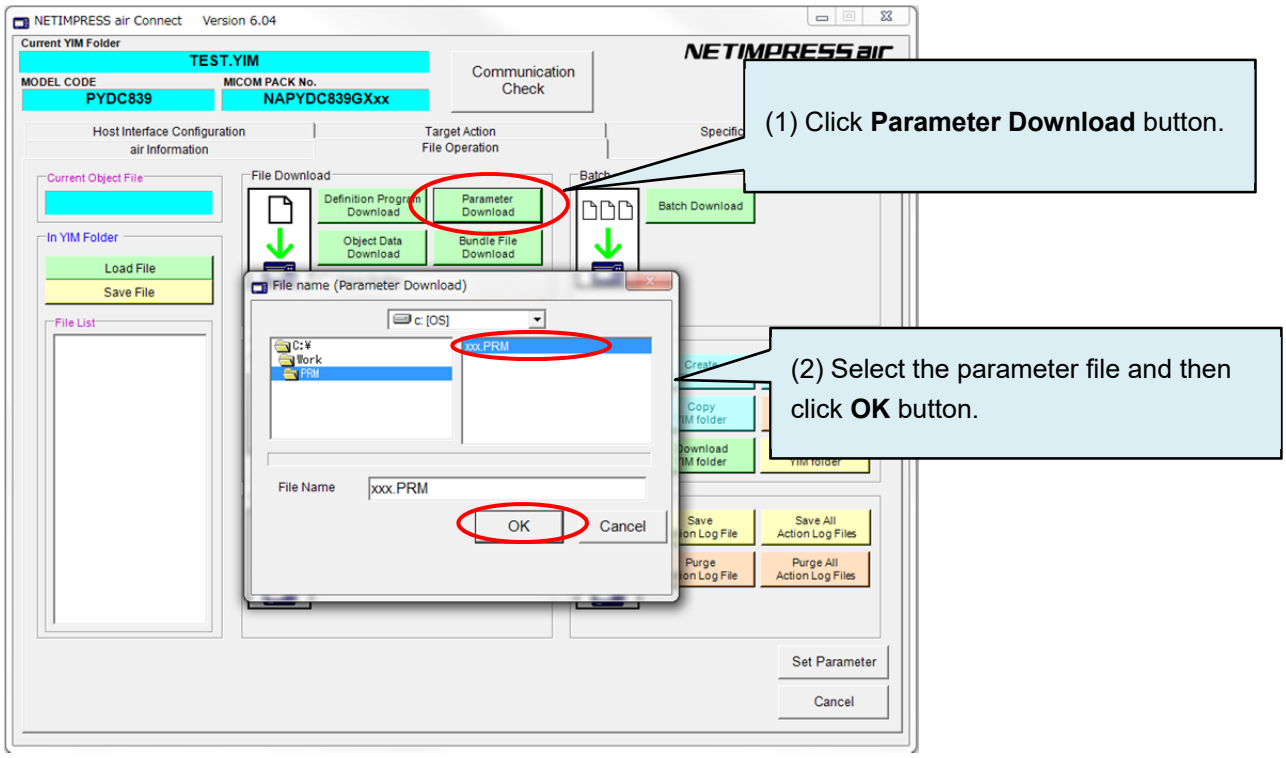
Definition program file	● Extension of the file is .CM. ● Get it from our website.



4.3.2 Downloading a parameter file

For downloading the parameter file, click **Load Parameter** on the “Parameter Table” group on the “File Transfer” tab.

Parameter file	● Extension of the file is .PRM. ● This is included in the Micom-pack. ● This is a parameter table file with the device information of target system.



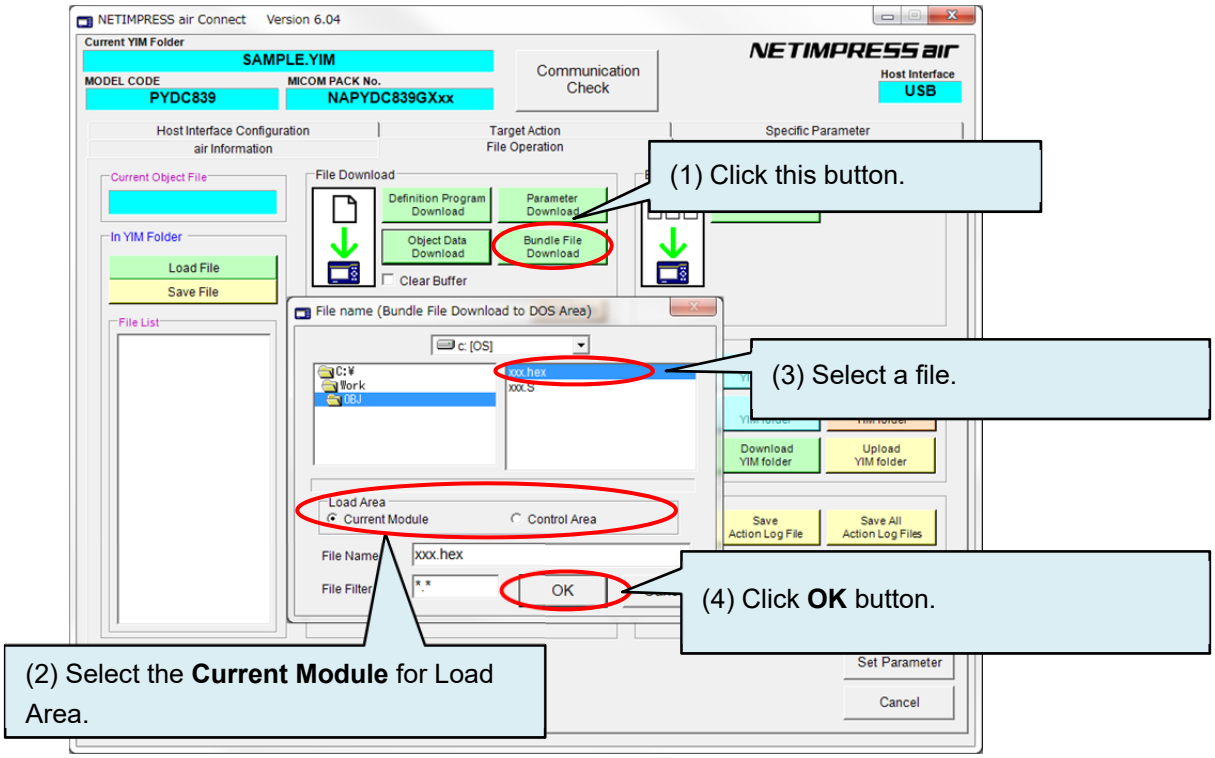
4.3.3 Downloading the Bundle Files

Download the file into the current folder.

Select the current folder on the folder/file list, and then click **Bundle File Download** button of the File Download group on the File Operation tab.

File selection window is shown. Select a file you want to download, and then click the **OK** button. Click the **Cancel** button if you want to cancel the downloading of bundle file.

If you select the current module for the load area from the file selection window, the file is downloaded into the current folder.



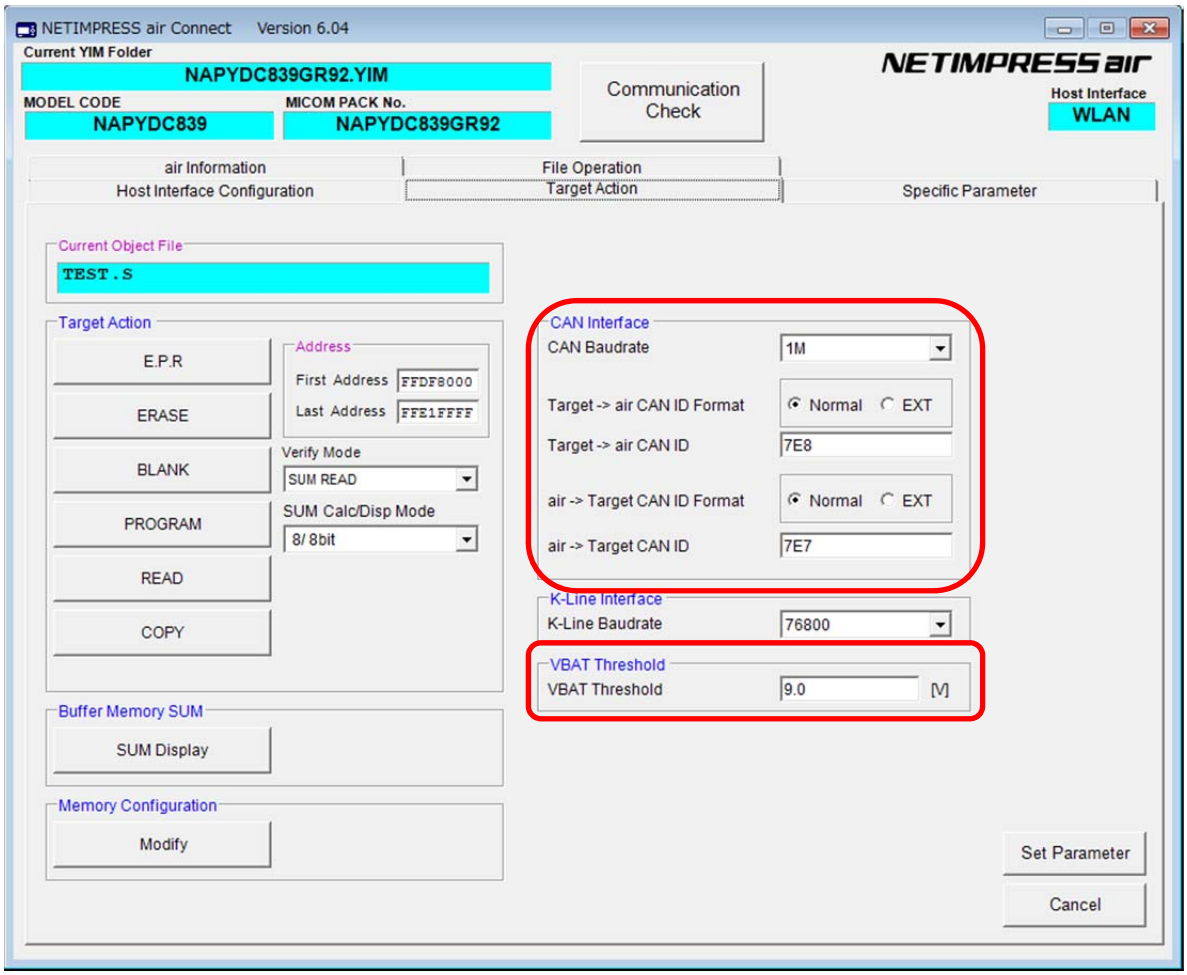
Bundle file	● Collective term of the files for setting the programming environment. (Definition program file, parameter file, and programming object are not included.) ● The files that users created by using software provided by us are included. (KEY file etc.)
KEY file	● Extension of the file is .KEY. ● This is a file for checking the device security. ● Create this file by using AZ481 (KEY file generator). ➥ For details of the KEY file, and how to create the file, see Chapter 8"KEY file".
AMK file	● Extension of the file is .AMK. ● This is included in the Micom-pack. ● Master KEY file for checking the device security
BTP file	● Extension of the file is .BTP. ● This is included in the Micom-pack. ● Program file for controlling the programming of device

4.3.4 Setting Parameters

Settings of parameter file which you can download at Chapter 4.3.2 Downloading a parameter file are the initial settings of typical parameters configured by us. You may need to make a change in accordance with your target system.

Set the parameters by selecting the **Target Action** tab.

Set the communication baud rate, CAN ID, and the detection level of the target power (VBAT threshold).



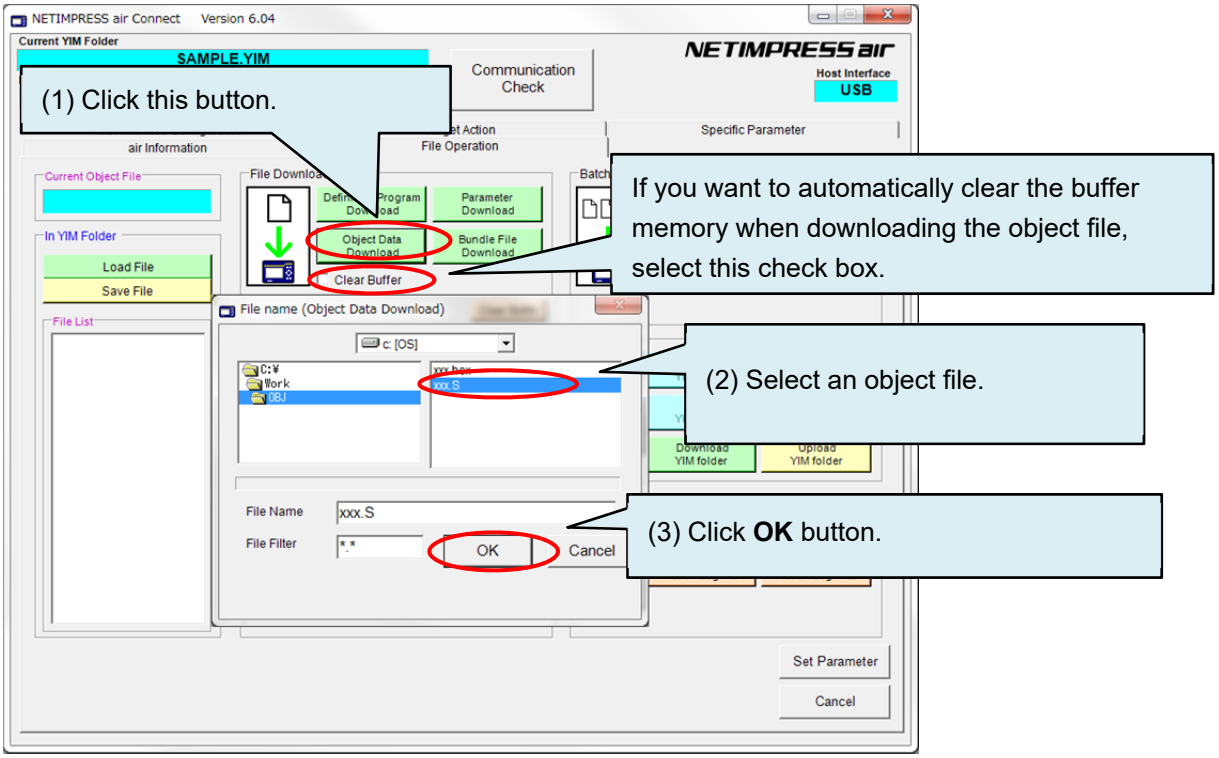
For details of the parameter table, see each manual of definition program and Micom-pack.

4.3.5 Downloading the object file

Download the object file (Programming file) into the buffer memory of the current folder.

Select the current folder on the folder/file list, and then click **File Download** button of the File Download group on the File Operation tab.

Object file selection window is shown. Select an object file you want to download, and then click the **OK** button. Click the **Cancel** button if you want to cancel the downloading of object file.



If you select the "**Clear Buffer**" which you can find in the File Download group on the File Operation tab, it automatically clears the buffer memory when downloading the object file.

If you do not clear the buffer before downloading the object file, data loaded previously may remain in the buffer memory. This may cause the programming of wrong data.

Setting of the programming environment is completed now.

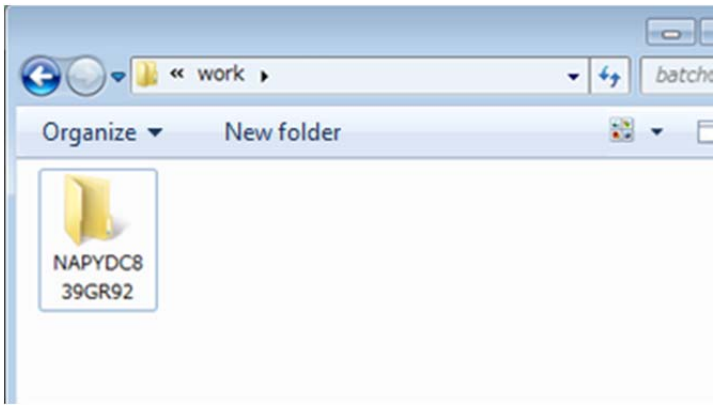
4.4. Batch Download

You can download the definition file, parameter file, object file and bundle file, which are stored in the host PC based on the certain rule, at once. (Chapter 4.2 to 4.3 of this manual can be done at once)

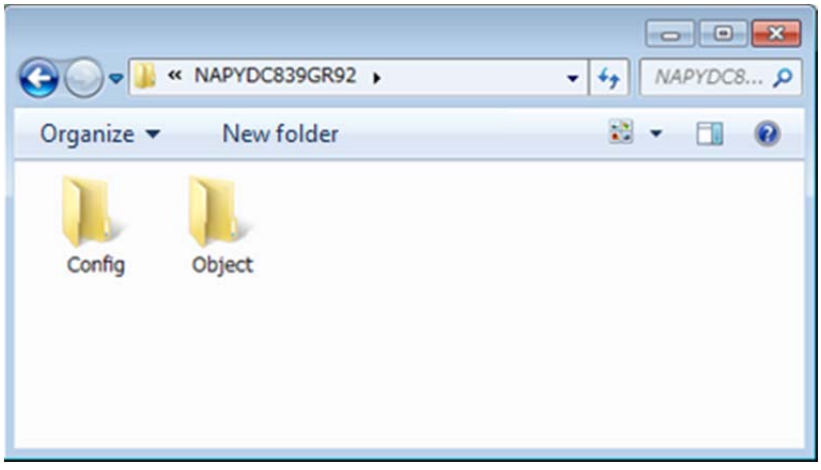
4.4.1 Prepare the folder for batch-download

Create a folder in accordance with the YIM folder name you are going to create.

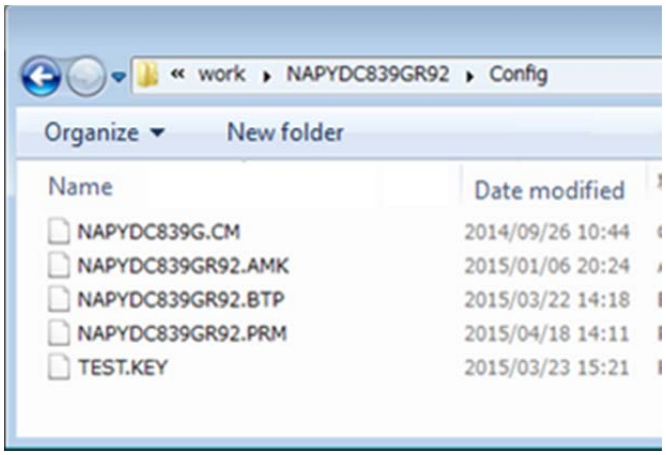
In the example below, NAPYDC839GR92.YIM is created in the SD card for NETIMPRESS air after the batch-downloading.



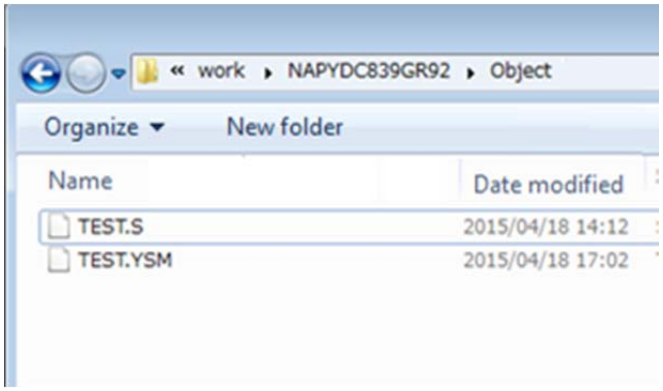
Create “Config” folder and “Object” folder in the folder you have just created.



In the “Config” folder, copy the definition file (.CM), parameter file (.PRM), BTP file, and bundle file (AMK file, KEY file etc.).



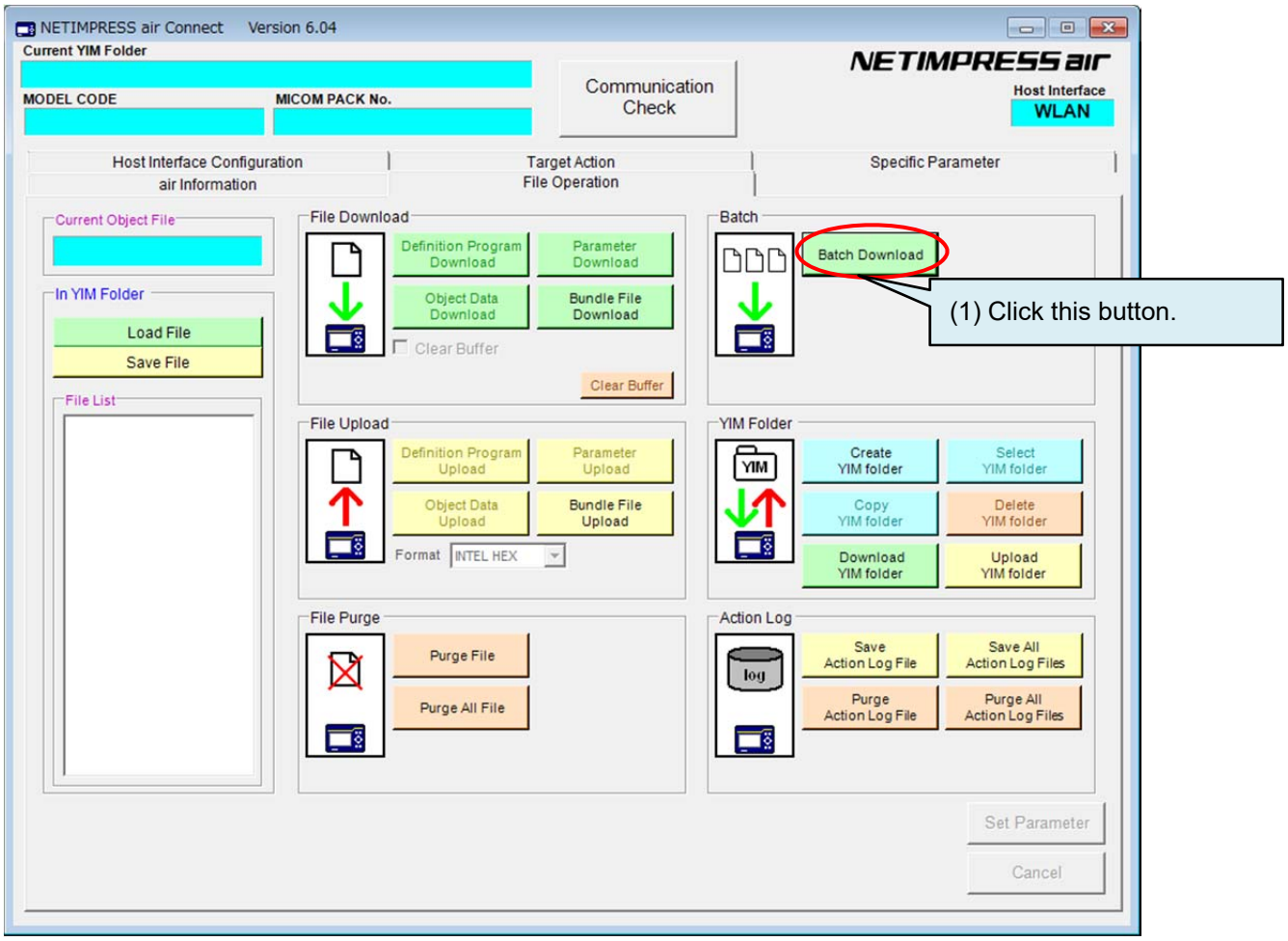
Copy the object file and YSM file (optional) in the “Object” folder.

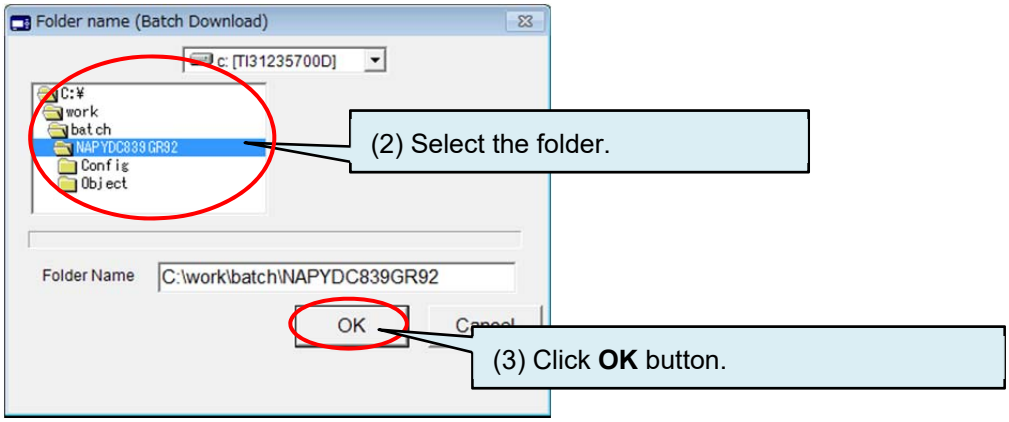


4.4.2 Executing the batch-download

Click the “**Batch Download**” button which you can find in the Batch group on the File Operation tab.

File selection window is shown. Select a file you want to batch-download, and then click the **OK** button.





4.5. Connecting with Target System

This chapter explains the typical connection example of the target system and main unit.

Connection may vary depending on your programming environment.

Check the manual of the definition program and Micom-pack for details.

Manuals of definition file and Micom-pack can be downloaded from our website.

https://www.dts-insight.co.jp/en/support/support_netimpress_air_list/top/index.php?m=Search

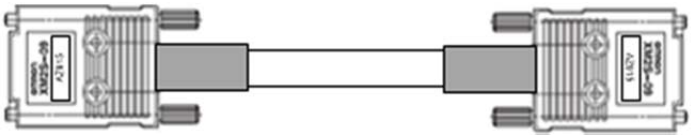
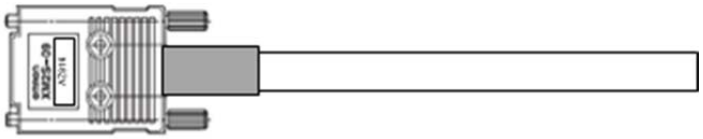
For details of specification of each target probe, see Chapter 5 of NETIMPRESS air Hardware Manual. Manuals are available from our website.

https://www.dts-insight.co.jp/en/support/support_netimpress_air/?m=Document&item=1

4.5.1 Connecting by using the target probe

(1) Types of probe

Connect the main unit by using a target probe suitable for your target board.

AZ915	Target side: D-SUB 9pin 
AZ916	Target side: Not treated. (No connectors. Process the wire (add a connector) in accordance with the specification on the target side.) 

(2) Wire connection

See “Connecting with a target system, and details of dedicated connectors” on the manual of Micom-pack to connect the target probe and target system.

(3) Connecting

Check the type of the target probe and the wire connection, and then connect the main unit and target system.

5. Programming

This chapter explains how to start the programming of target system.

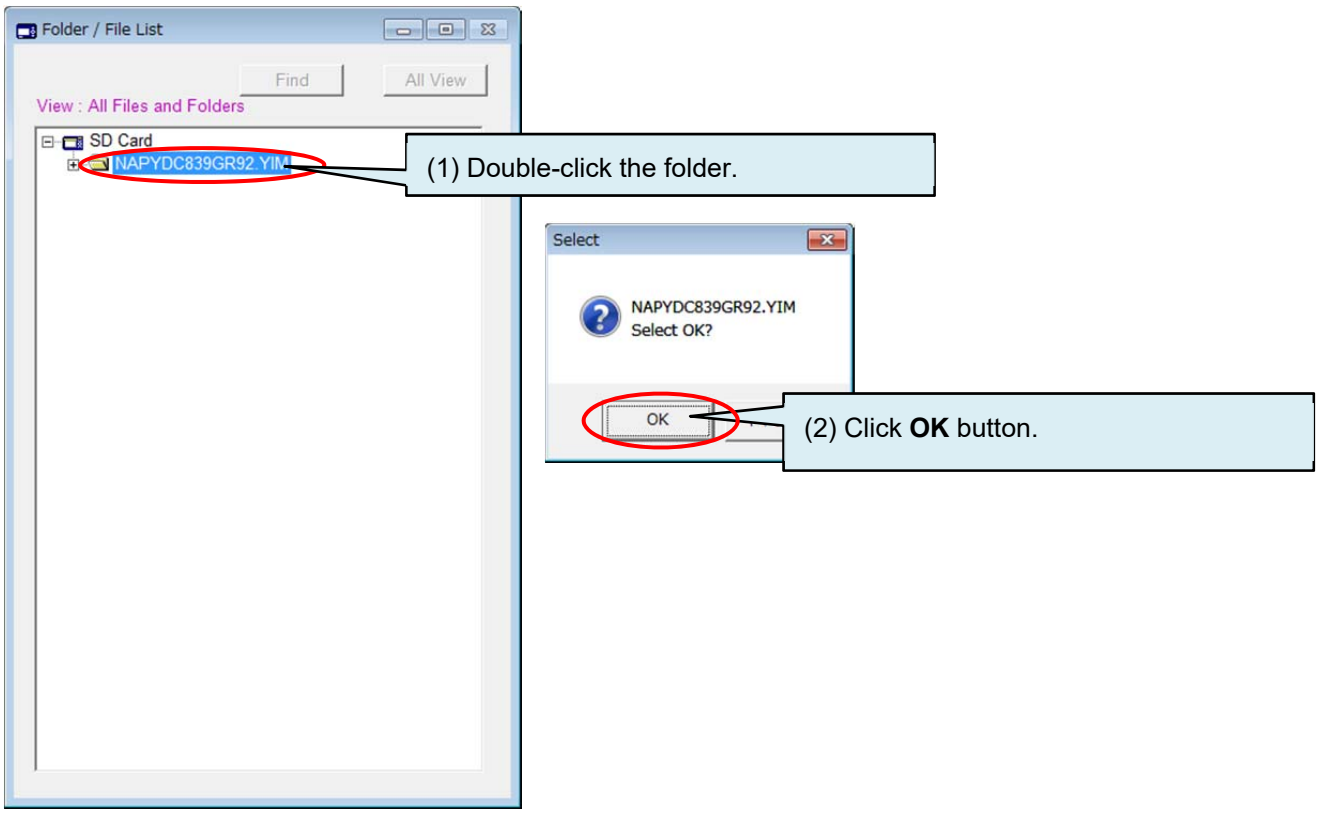
5.1. Programming from air Connect

(1) Connect the main unit and target system.
Make sure that it is connected correctly, and turn on the power of target system. (The power of main unit is supplied from a battery of target system (VBAT) normally.)

(2) Start up AZ990 (air Connect)

See Chapter 3.2 “Setting the environment of Wireless LAN” for checking the setting again if you cannot connect it by air Connect.
If you use USB for connection, connect the USB cable, and then check to make sure that “Interface” on the Host Configuration window is USB.

(3) Select YIM folder
On the Folder/File List window, double-clicking the YIM folder that you set the programming environment. “Select” dialog box is shown. Click the **OK** button.

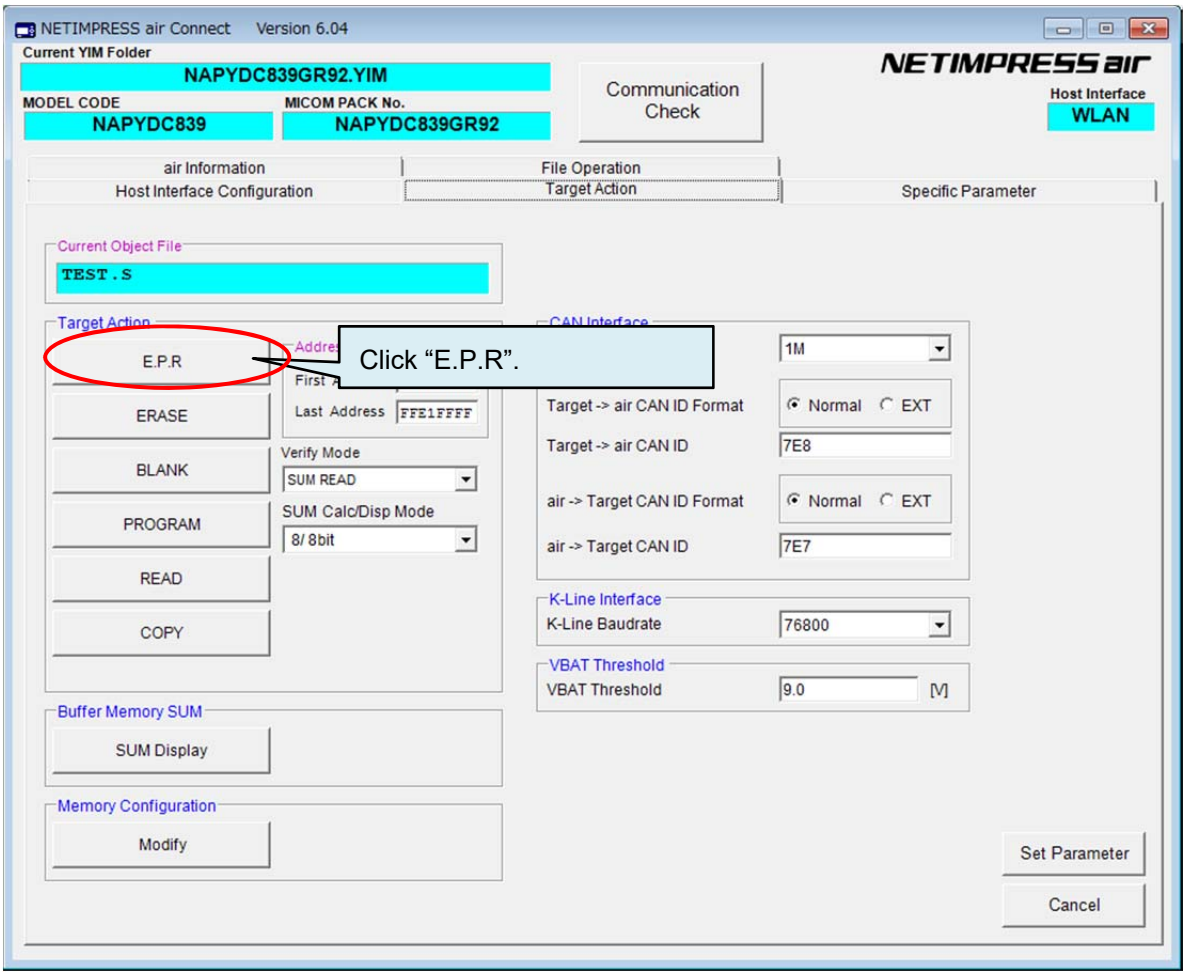


(4) Programming

Click the **Target Action** tab. Execute the device function to start the programming. Normally, execute the E.P.R (Erase – Program – Read Verify).

Feature of device function may vary depending on the definition program.

For details of each device function, see the manual of the definition program.



(5) After the programming is completed, click the close button at the upper right of AZ990 (air Connect) window to close the program.

(6) Turn off the power of target system and main unit.

Please note the order of power on/off.

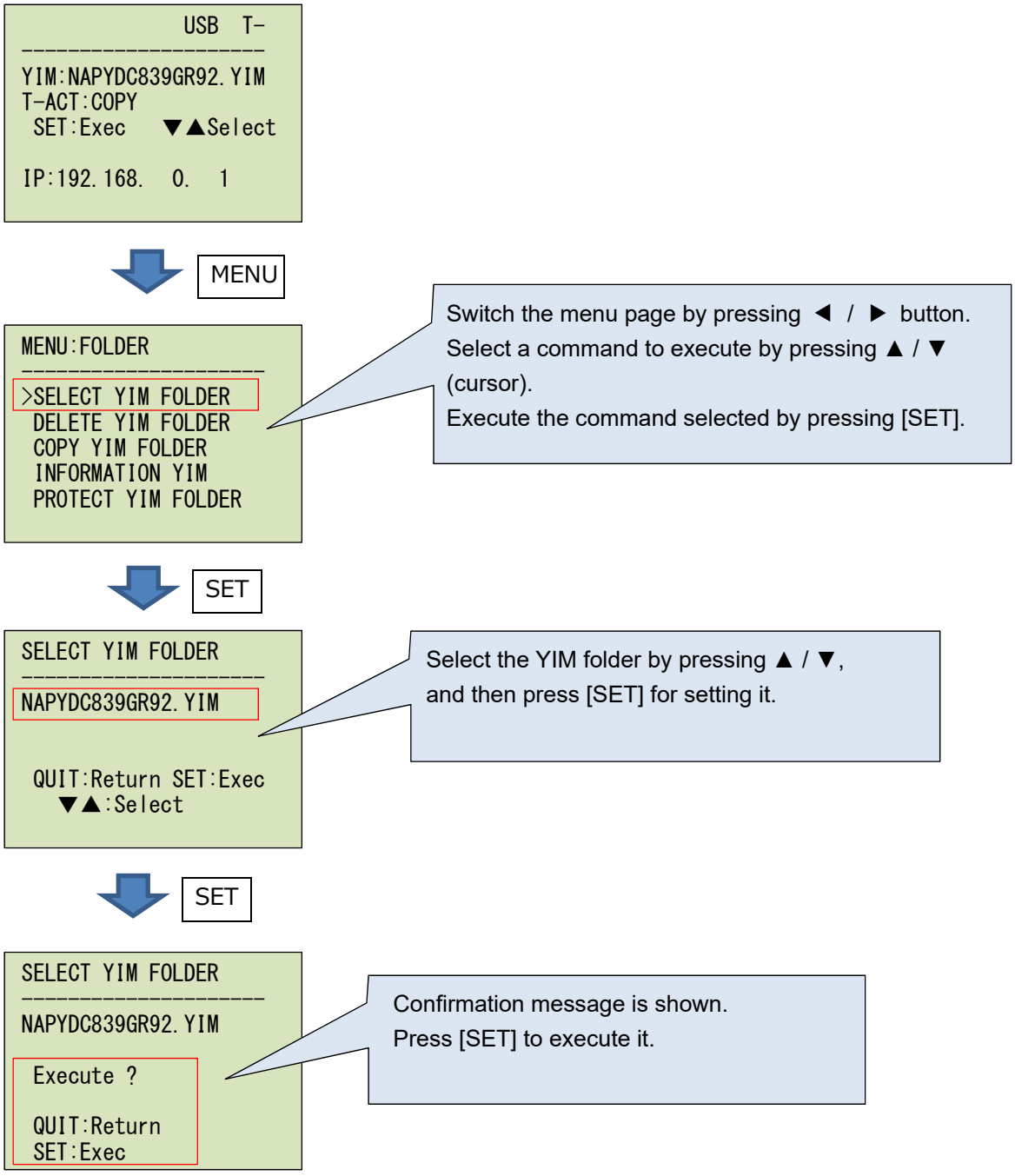
- Power on …. Turn on the power of main unit first, and then turn on the target system power.
  Or, turn on the powers of both devices at once.
- Power off …. Turn off the power of target system first, and then turn off the programmer power.
  Or, turn off the powers of both devices at once.

5.2. Programming (Stand-alone operation)

(1) Connect the main unit and target system.
Make sure that it is connected correctly, and turn on the power of target system. (The power of main unit is supplied from a battery of target system (VBAT) normally.)

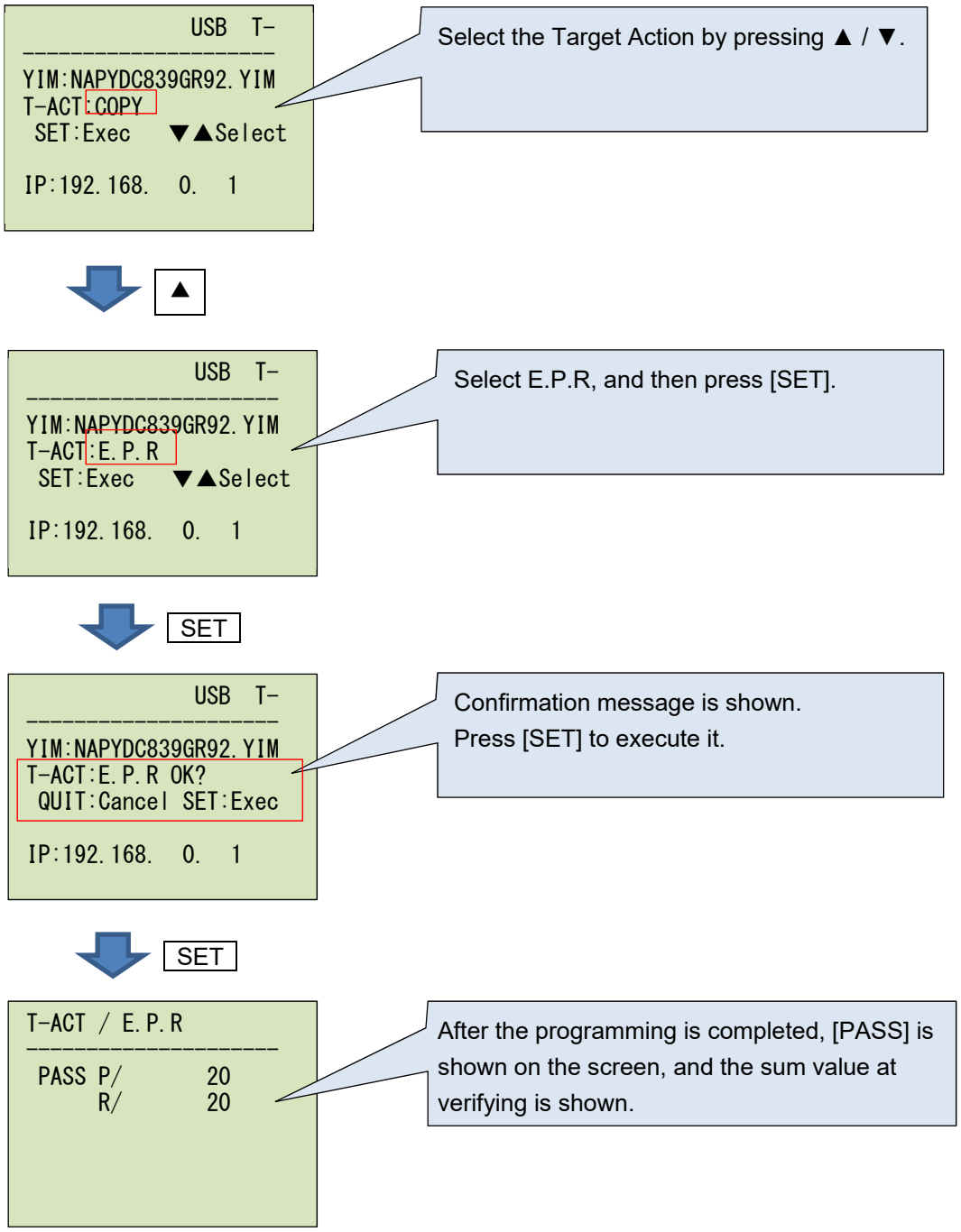
(2) Select the folder

Press [MENU] button, and then [SET] button. "SELECT YIM FOLDER" command is shown.



YIM folder is selected if you press [SET] button.

(3) Programming



6. Screen of AZ990 (air Connect)

You can download files, execute the device function, and set programming environment by using AZ990 (air Connect).

The screen of AZ990 is configured by 6 tabs.

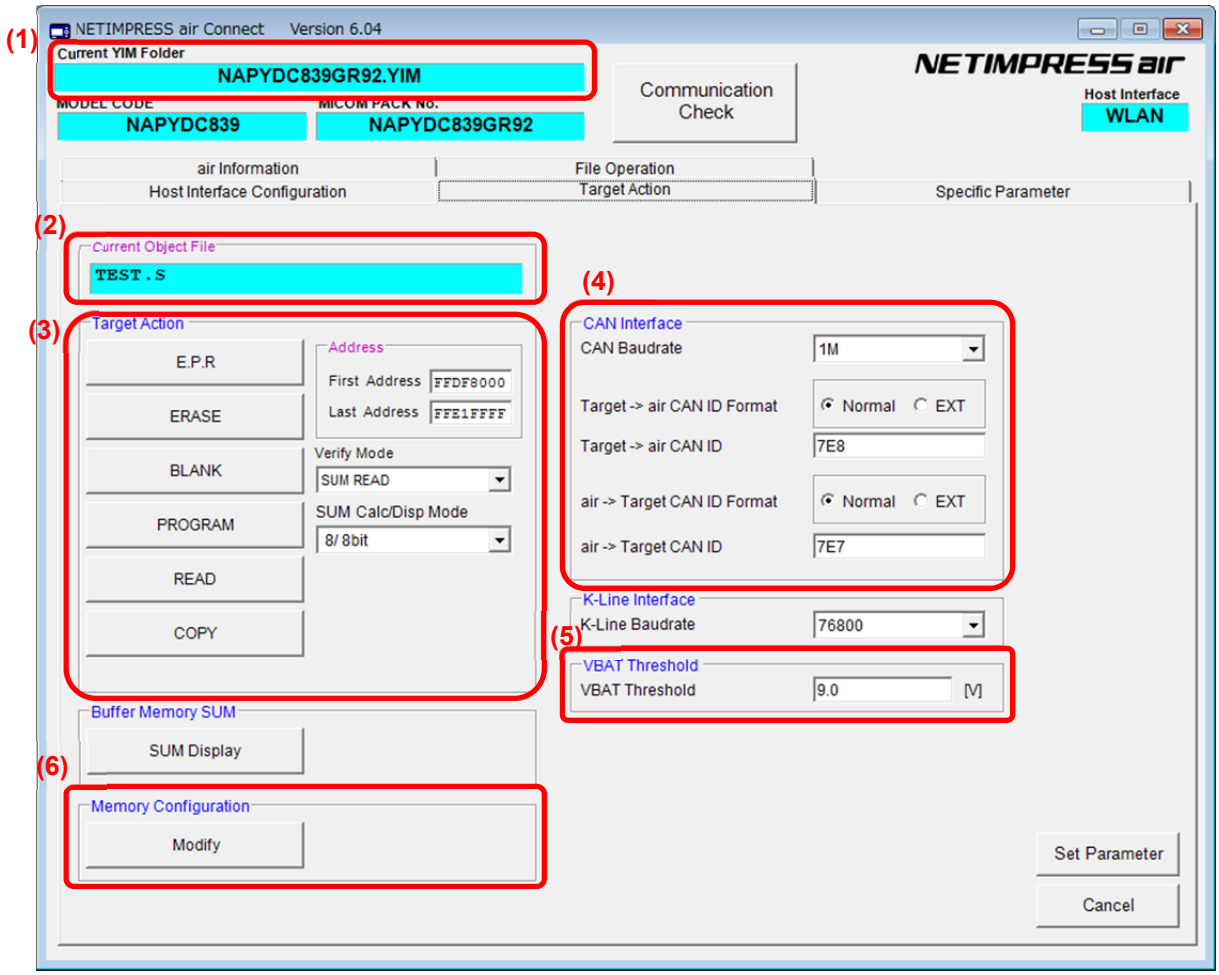
- Host Interface Configuration … Screen for setting the connection between air Connect and main unit
- Target Action … Screen for executing the target action
- Specific Parameter … Screen for setting the parameter (Password is required)
- air Information … Screen for setting the air, and checking the information
- File Operation … Screen for transferring the file

This chapter explains the Target Action, File Operation, and air Information, which are most frequently used screens.

For other functions and details of the operation, see NETIMPRESS air Operation manual (For Programmer).

6.1. Target Action (Screen for executing the target action)

Target Action screen is for executing the target action.



(1) Current YIM Folder

YIM folder name currently selected is shown here. (In this example, NAPYDC839GR92.YIM is selected)

(2) Current Object File

Name of the object file currently loaded in the buffer memory is shown here. File name of the object selected at “Object Data Download” in the “File Download” group that you can find in the “File Operation” tab is shown.

(3) Target Action

Execute the target action. Address range for the target action can be changed here.

(4) CAN Interface

Set the baud rate of CAN, and ID.

(5) VBAT Threshold

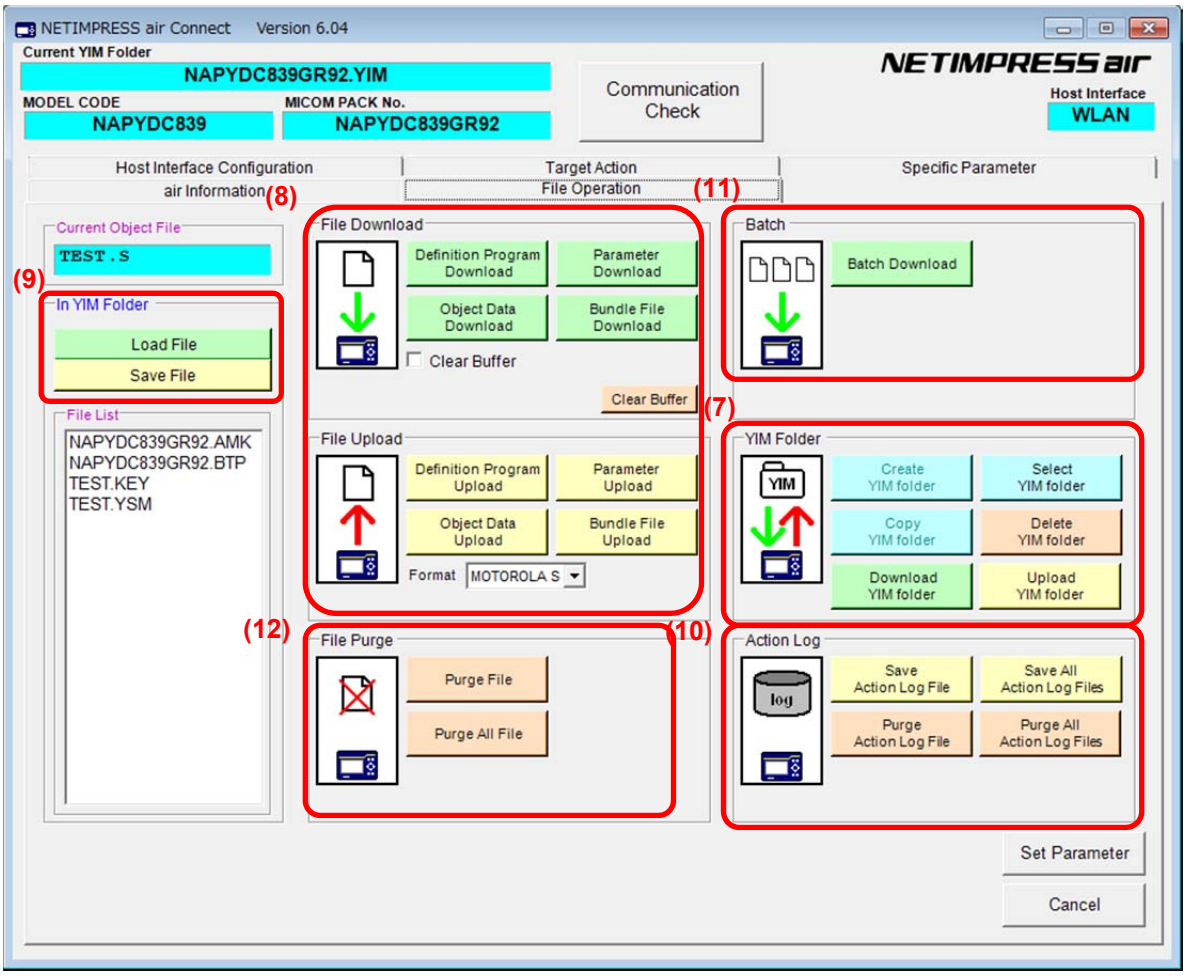
Set the threshold for detecting the target power voltage.

(6) Memory Configuration

Set up the block configuration of flash memory. Normally, you do not need to change here.

6.2. File Operation (Screen for transferring the file)

File Operation screen is for transferring the file necessary for setting the programming environment, adding the license, and creating/selecting/copying/deleting the YIM folder.



(7) YIM Folder

This button is used for operating YIM folder and other files selected in Folder/File List Window. Folder/File List is displayed in new window.

(8) File Download / File Upload

Parameter Table:

This is for transferring the parameter file to the programmer, and saving it in the host PC.

Definition Program:

This is for transferring the definition program to the programmer, and saving it in the host PC.

Object Data:

This is for transferring the programming object to the buffer memory, or saving the data on the buffer memory into the host PC.

Bundle File:

This is for transferring the bundle file to the programmer, and saving it in the host PC.

(9) In YIM Folder

This is for loading the object file in YIM folder, and saving the contents in the buffer memory.

(10) Action Log

This is for saving the execution log files in the SD card to PC, and deleting the log files.

(11) Batch Download

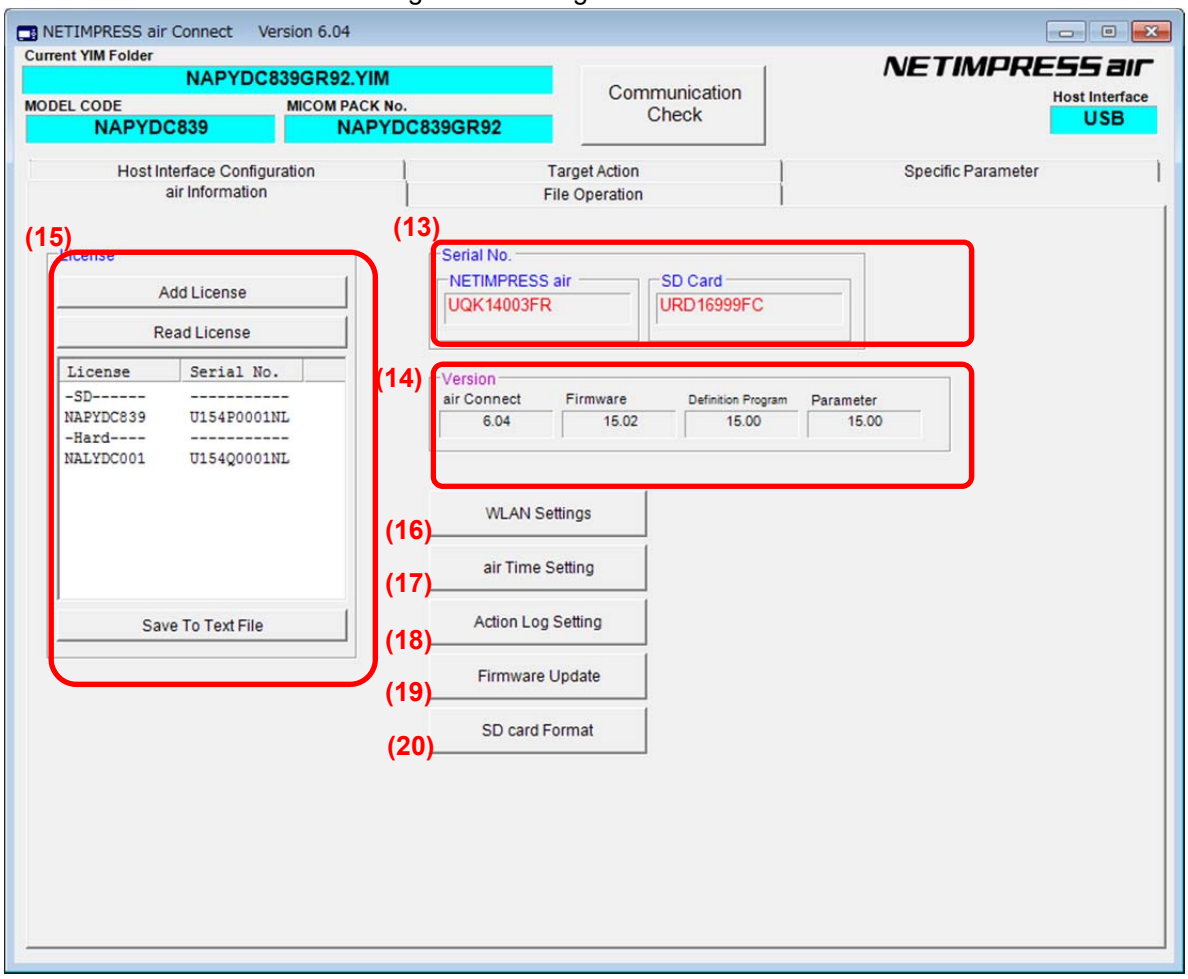
This is for downloading the setting files with certain format in the folder and object files at once.

(12) File Purge

This is for deleting the file.

6.3. air Information (Checking the air information and settings)

air Information window is for setting and checking the information of main unit.



(13) Serial No.

Serial number of main unit and SD card for NETIMPRESS air are shown here.

(14) Version

Version information is shown here.

(15) License

This is for adding licenses, and checking the license information.

(16) WLAN Settings

This is for setting the wireless LAN.

(17) air Time Setting

This is for setting the date and time of RTC (Real time clock) of main unit.

(18) Action Log Setting

This is for changing the setting of log.

(19) Firmware Update

This is for updating the firmware, and installing the firmware for logger.

(20) SD card Format

This is for formatting the SD card.

7. YIM folder

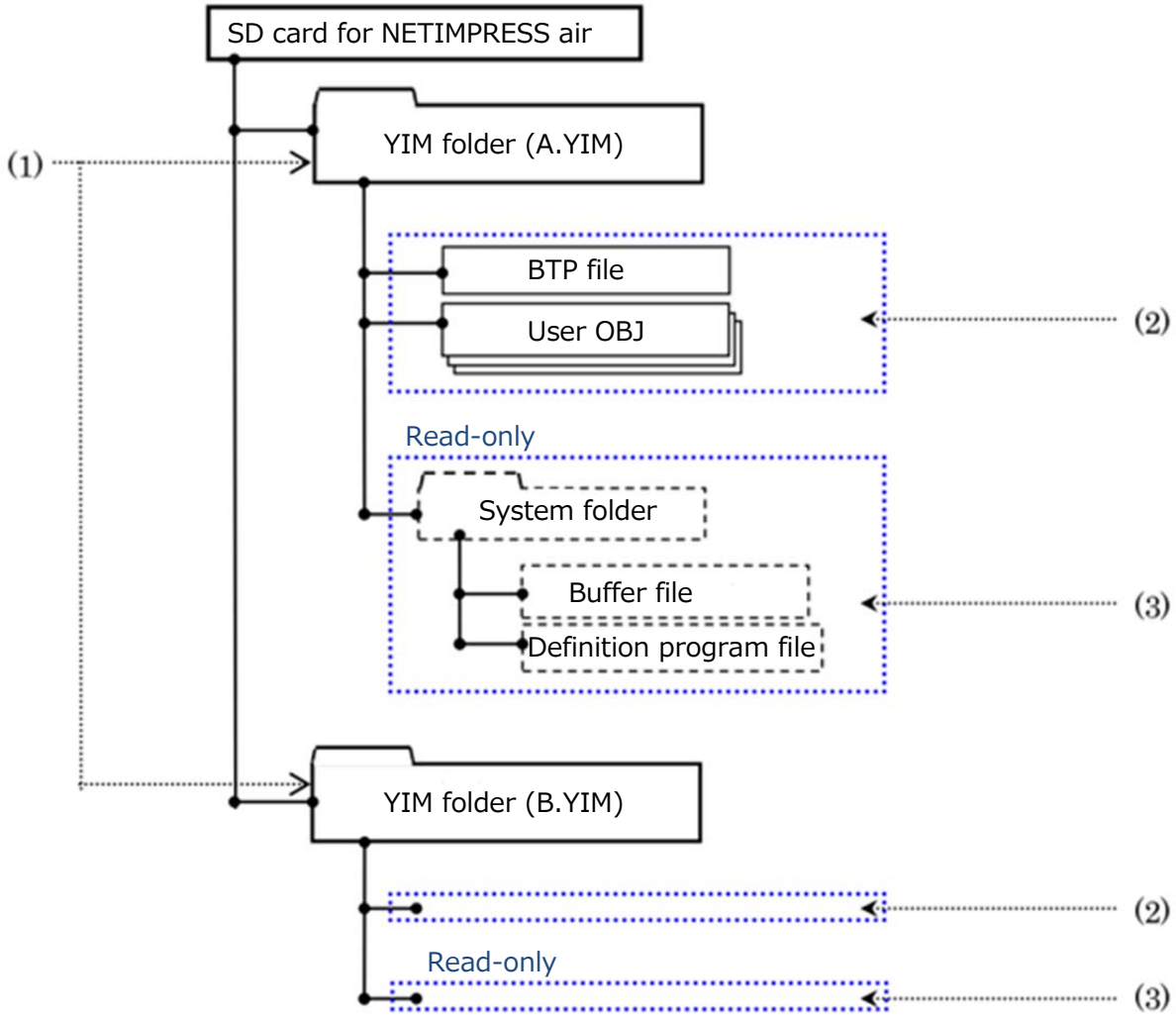
7.1. Configuration of YIM folder

YIM folder is for managing the programming object of SD card and the programming environment.

(1) More than one YIM folder can be stored in one SD card. Current YIM folder can be switched by the function operation.

(2) Store the BTP file (*.BTP), and user OBJ (*.KEY, *YSM, etc.) in YIM folder.

(3) Store the each buffer file (BUF.SYS), and definition file (CM.SYS) in the created YIM folder.



Do not change/erase BUF.SYS file, and CM.SYS file. If you do so, it will affect the programming.

File configuration in YIM folder can be checked by using AZ990 (air Connect). However please note that read-only area cannot be referred to.

For details on how to create YIM folder, see Chapter 4.2 “Creating a YIM folder”.

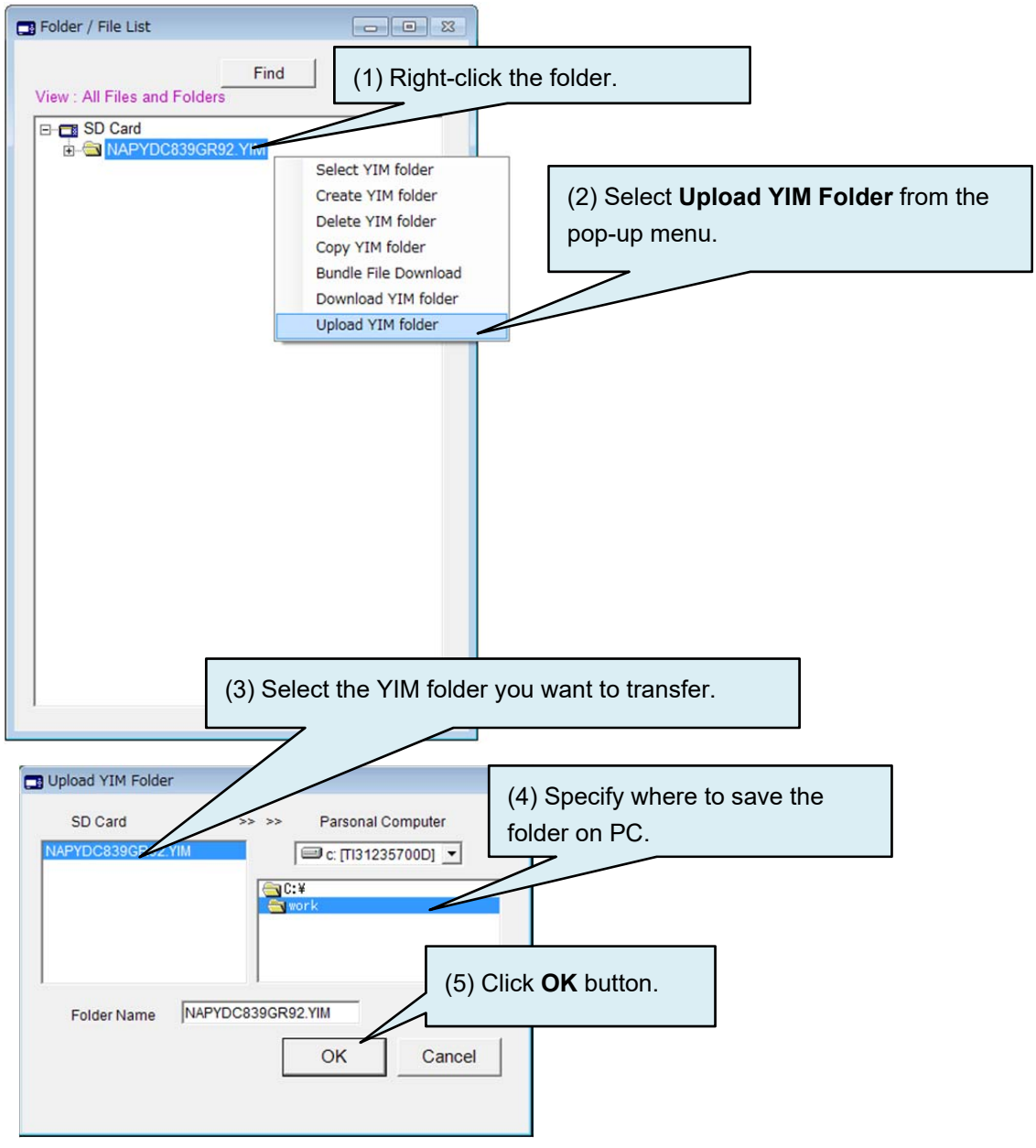
7.2. Managing the programming environment

Created YIM folder in the SD card can be stored in the host PC by using AZ990 (air Connect). You can re-create the same programming environment by transferring the saved YIM folder to another working environment.

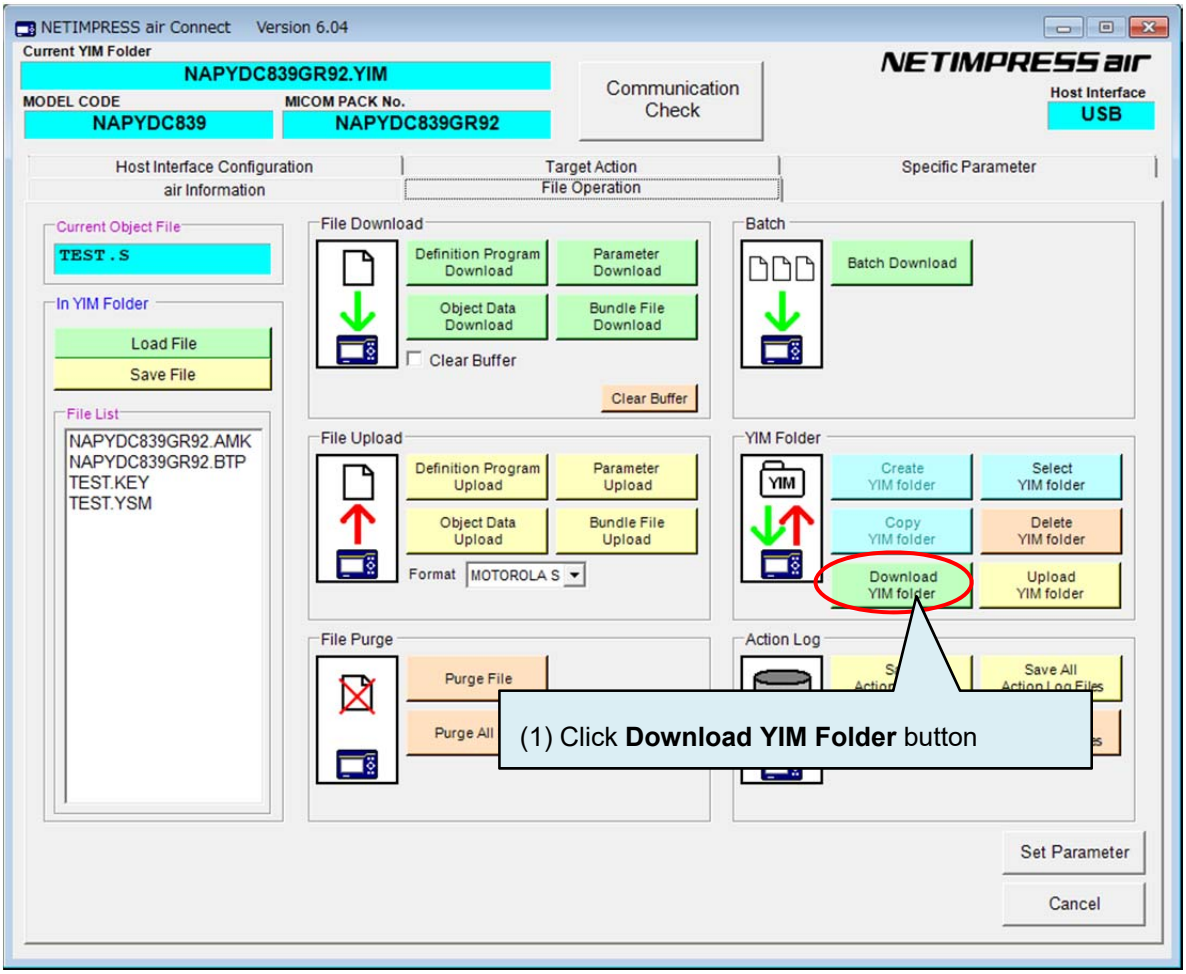
This chapter explains how to save the YIM folder, and how to load it.

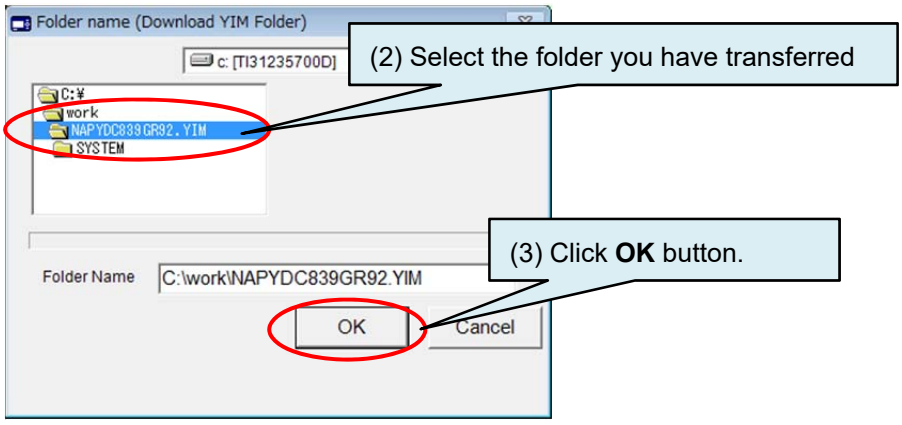
Same definition programming license is required in the destination SD card if you want to share the same programming environment with more than one SD card by transferring YIM folder.

7.2.1 How to save YIM folder (Operation for the original folder)



7.2.2 How to load YIM folder (Operation for the destination SD card)





8. KEY file

Some MCU has a security feature.

With the basic security feature, an encrypted data (ID code), embedded in the MCU, is sent from the programmer when the programmer accessing (read/write) the MCU, and the access will be failed if the data is not matched. Therefore the flash memory can be accessed only when the programming contents are obvious. By this way, it can prevent the wrong data programming and reading.

NETIMPRESS air creates KEY file with an encrypted data (ID code) for passing the security at programming.

KEY file	● This is a file for checking the security by issuing the ID code to device automatically when the programmer executed the target function. ● Security ID address, ID size and ID data value are stored. ● KEY file has to be in the YIM folder. Download this file by using AZ990 (air Connect) as a bundle-file.

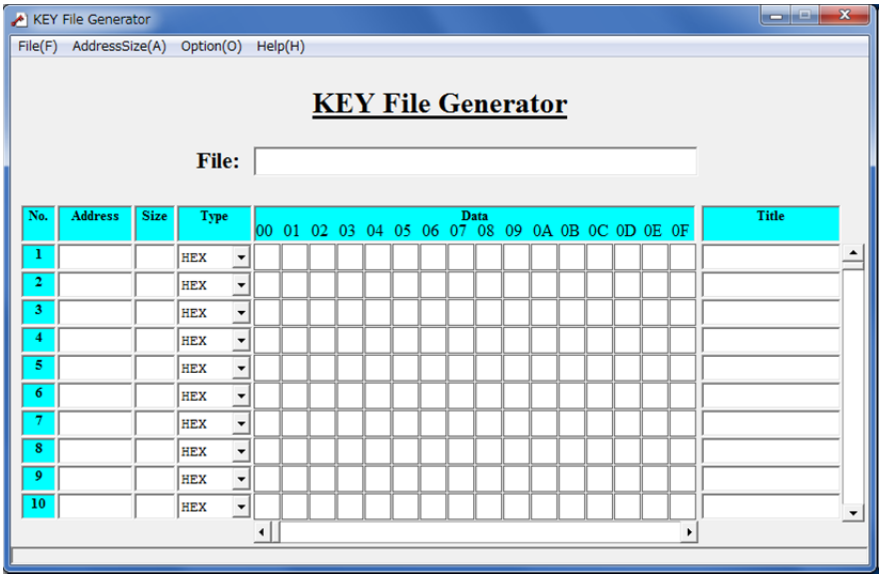
For details on how to download the bundle-file, see Chapter 4.3.3 Downloading the Bundle Files.

Specification of security varies depending on the MCU. For details, see the manuals of definition program and Micom-pack.

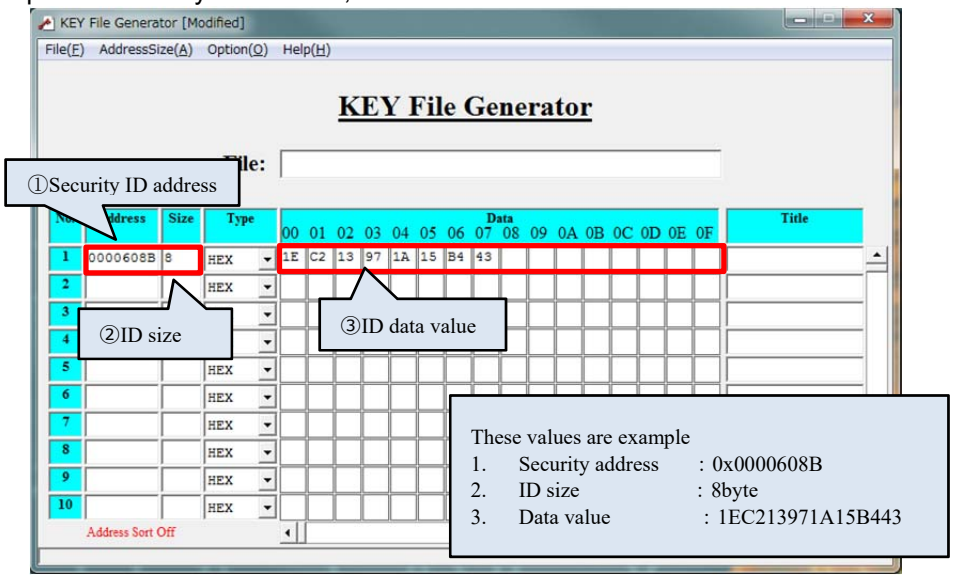
8.1. Creating KEY file

Create the KEY file by using AZ481 (KEY file generator).

(1) Start up AZ481 (KEY file generator).



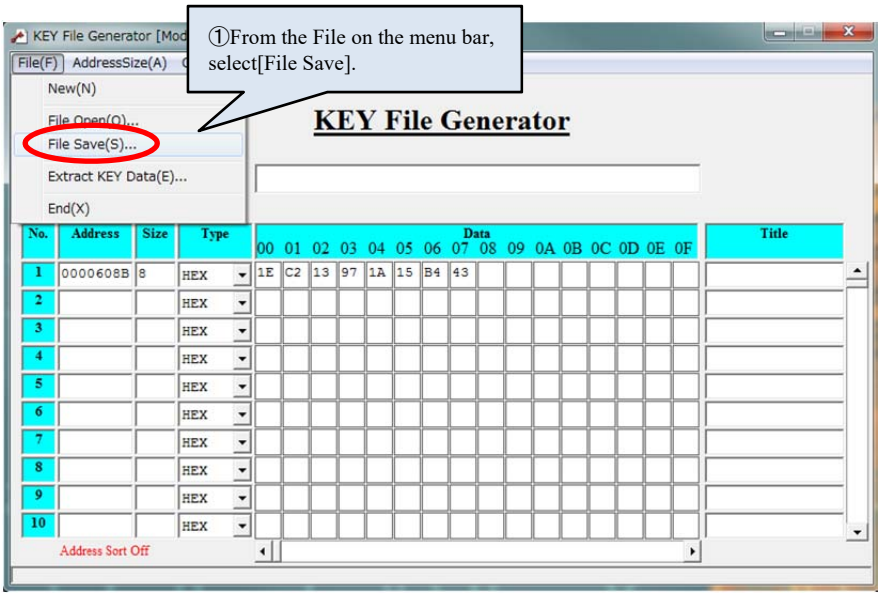
(2) Input the security ID address, ID size and ID data value.

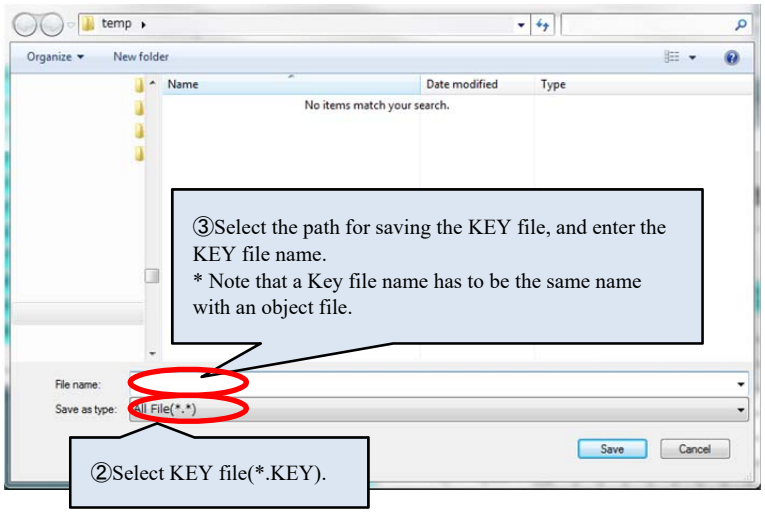


(3) Save KEY file. (From the menu bar [File] menu, select <File Save>.)

Select the KEY file (*.KEY) as a file type, and then specify a path for saving the KEY file.

Set the file name of KEY file, and then click the **Save** button.





Note that YSM file name has to be the same name with a user object file.

9. Check the SUM value in the buffer of YSM file

By saving the SUM value of buffer memory in YSM file, you can check the SUM value of the user object whenever you execute the device function. By using this function, you can prevent the programming of incorrect object data when the buffer memory of programming object was corrupted accidentally.

9.1. YSM file

Create the YSM file you saved the SUM value of buffer memory, and then place it in YIM folder.

After the device function is completed, the programmer automatically compares the SUM value in the YSM folder with the SUM value at when the device function was executed. If the values are not matched, it will result in an error (YSM CHECK ERROR).

Download the YSM file by using AZ990 (air Connect) as a bundle-file.

For details on how to download the bundle-file, see Chapter 4.3.3 Downloading the Bundle Files.

9.2. Creating YSM file

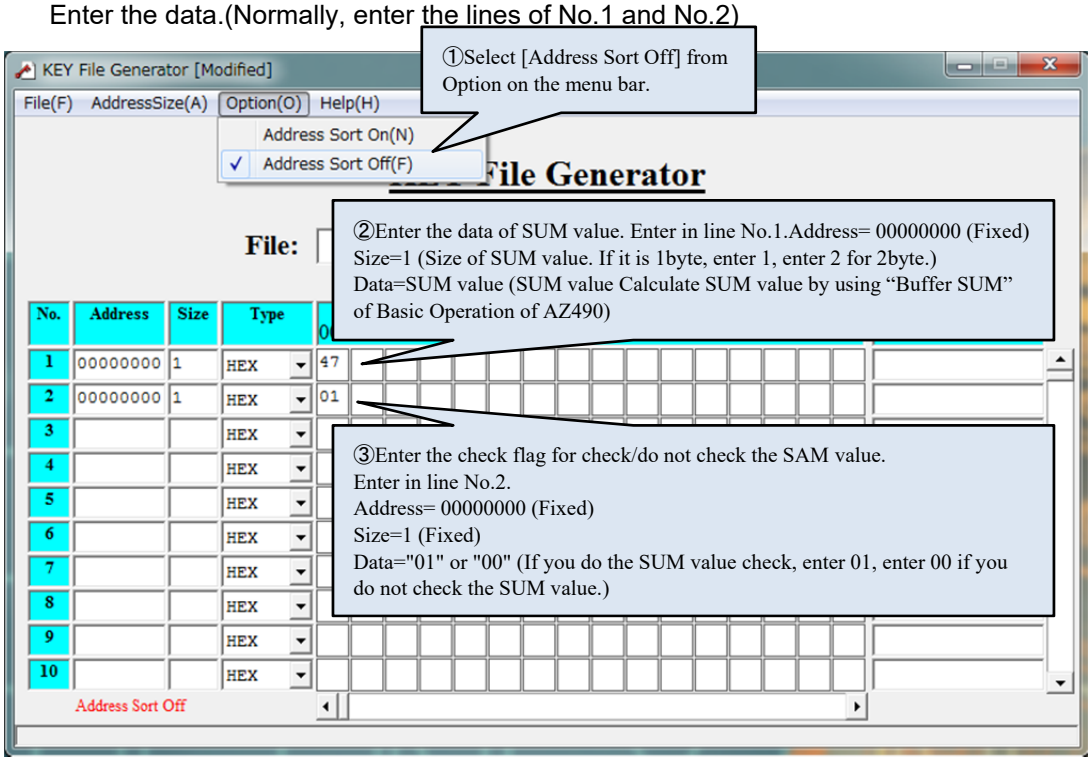
This chapter explains how to create the YSM file.

(1) Start up AZ481 (KEY file generator).

(2) Create the YSM file by following the steps below.

Select 〔Address Sort Off〕 from Option on the menu bar.

Enter the data.(Normally, enter the lines of No.1 and No.2)

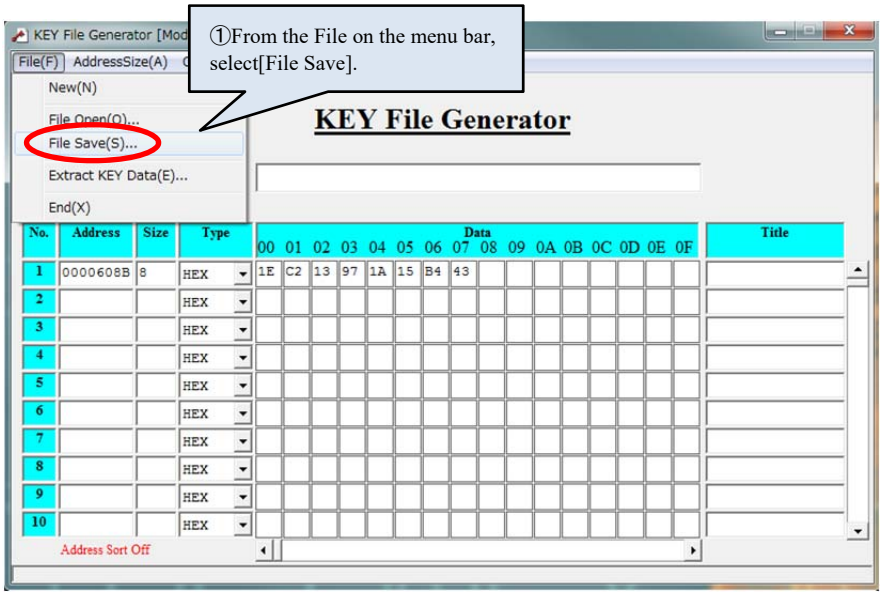


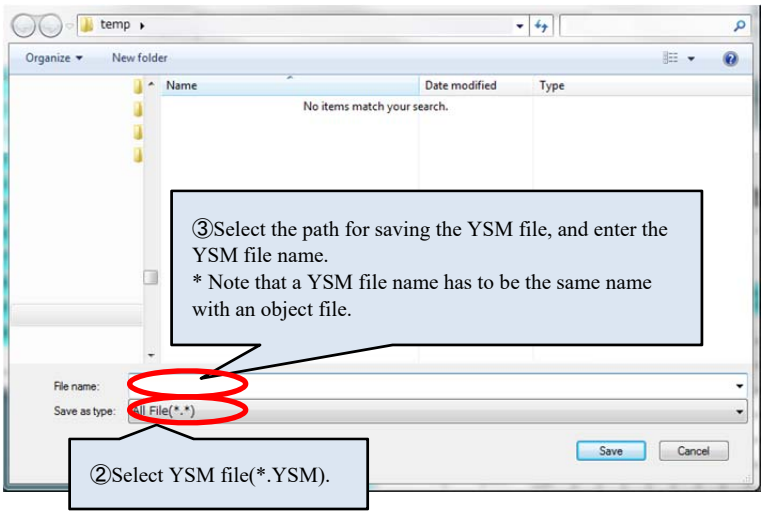
(3) Save YSM file. (From the menu bar [File] menu, select <File Save>.)

Select the YSM file (*.YSM) as a file type, and then specify a path for saving the YSM file.

Set the file name of YSM file, and then click the **Save** button.

Note that YSM file name has to be the same name with a user object file.





The SUM value check function which uses YSM file can also check the data in a certain area of buffer memory. You can also check the versions of the user object file by using this function.

For details, see Chapter 8.1.2 of NETIMPRESS air Operation manual (For Programmer).

NETIMPRESS air

NET IMPRESS air Start-up Manual (For Programmer)

DTS INSIGHT Corporation

URL：https://www.dts-insight.co.jp/en/support/support_netimpress_air/

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