

MegaNETIMPRESS
C"arNETIMPRESS
NETIMPRESS next

Startup Manual

DTS INSIGHT CORPORATION

Startup Manual**No. M2380AN-05****Publication History**

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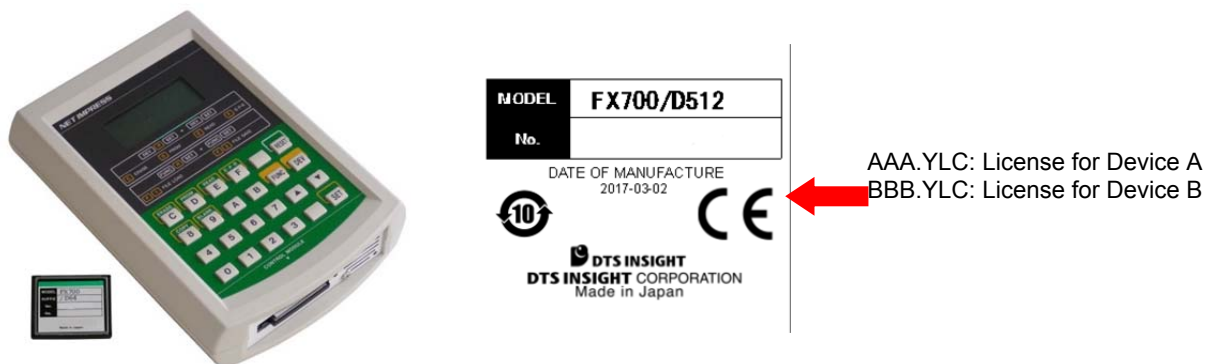
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1 Overview & Features

The MegaNETIMPRESS/C™arNETIMPRESS/NETIMPRESS next (hereafter called as “NETIMPRESS”) is the in-circuit programmer that can perform high-speed on-board programming of an microcomputer with built-in flash ROM or flash ROM connected to external bus of a microcomputer.



The NETIMPRESS can support programming various devices by inserting the compact module (hereafter called as “Control Module”), which contains programming firm data for each microcomputer, into the programmer main unit.

The Control Module uses the Compact Flash (CF) card as its media.

You can add a target device to program by adding programming conditions to the Control Module in a form of a license.

The NETIMPRESS can be also used as a stand-alone since programming conditions are saved in the Control Module.

Also, you can control the programmer very flexibly from a PC, as it has the 100Base-Tx interface. You can build up an automatically-controlled production line system by using the Remote Package AZ491 that is available for an additional order.

2 Notes & Points

The Control Module is specifically designed and built for the NETIMPRESS programmer and **cannot be used for any other purposes. (A CF card commercially available cannot be used as the Control Module.)**

■ About this manual

This Startup Manual describes only the initial setup procedures required to perform programming.

For detailed specifications of the NETIMPRESS main unit, Control Module, probe, software, etc., see their relevant manuals.

This Startup Manual explains how to install the software, set up an IP address in the NETIMPRESS main unit, add a license to the Control Module and file operation steps. This Startup Manual describes the processes up to the step to control the programmer from a PC.

For the information on how to set up environments of each device and connection information, which vary depending on each device, see the manual of the relevant manual of the Control Module or probe.

Note:

The Control Module (CF card) is not added with the license when delivered. Be sure to add the license (extension: YLC), which is provided in CD-ROM.

■ PC Requirements

- The NETIMPRESS runs only on a Windows PC (Windows XP, and Windows7).
- An Ethernet cable (10BASE-T, and 100BASE-TX) to connect the programmer and a PC is a user-prepared item. (When you make one-to-one connection without using a hub, you need a cross cable.)
- **The reader for the CF card (USB connection, for example) at the side of a PC is a user-prepared item.**

3 Checking Hardware and Software (Standard Package)

This chapter explains the standard package of hardware and software that will be provided for the NETIMPRESS programmer. (The hardware and software to be provided may differ depending on your environments.)

3.1 Hardware

The following items are included in the hardware package of the NETIMPRESS.

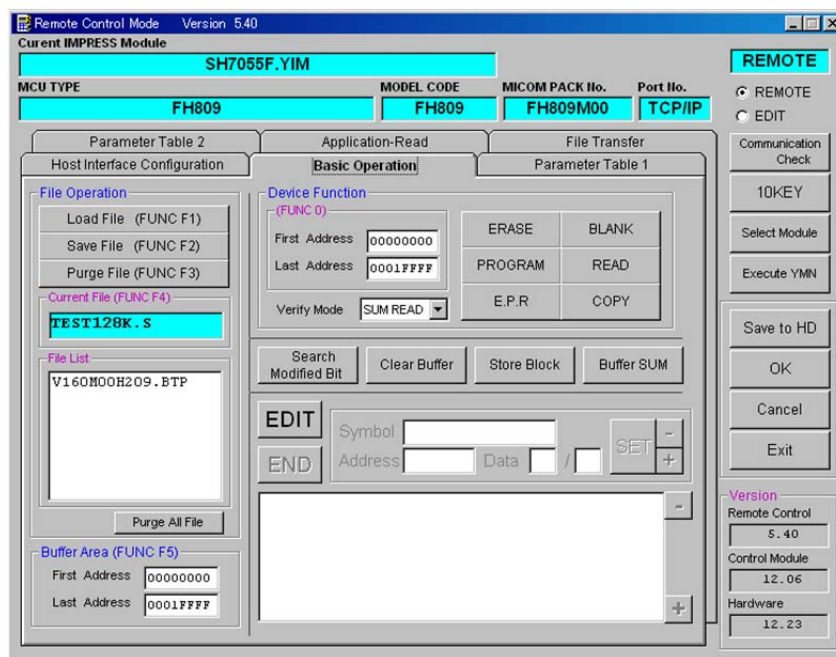
- (1) NETIMPRESS main unit (AF320/AF420/AF520/AF620/AF430)
- (2) AC adapter specially built for the NETIMPRESS
(/AC4P INPUT: 100V to 240V OUTPUT: 12V)
- (3) Control Module (Media: Compact Flash (CF) card)
- (4) CD-ROM: 1 to 2 pieces (License Pack, Utility) depending on a target device
- (5) Target probe, adapter, etc., which vary depending on a target device



3.2 Software

The following items are included in the software package of the NETIMPRESS.

- (1) [AZ490](#) (Remote Controller to download the various files, execute the device functions and set up various parameters)
- (2) [AZ482](#) (F/DF Sheet Generator to create a file to set up an IP address to the programmer main unit and download the files)
- (3) [AZ481](#) (Key File Generator to create an ID code Key to communicate with a PC, and a SUM file)



4 Installing the Software

The software to make the various settings to the NETIMPRESS programmer is available at our website:

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

Download the following software from the above mentioned web site:

- (1) [AZ490](#) (Remote Controller)
- (2) [AZ482](#) (F/DF Sheet Generator)
- (3) [AZ481](#) (Key File Generator)

Since they are the self-expanding files, decompress them on a PC and install them.

Note:

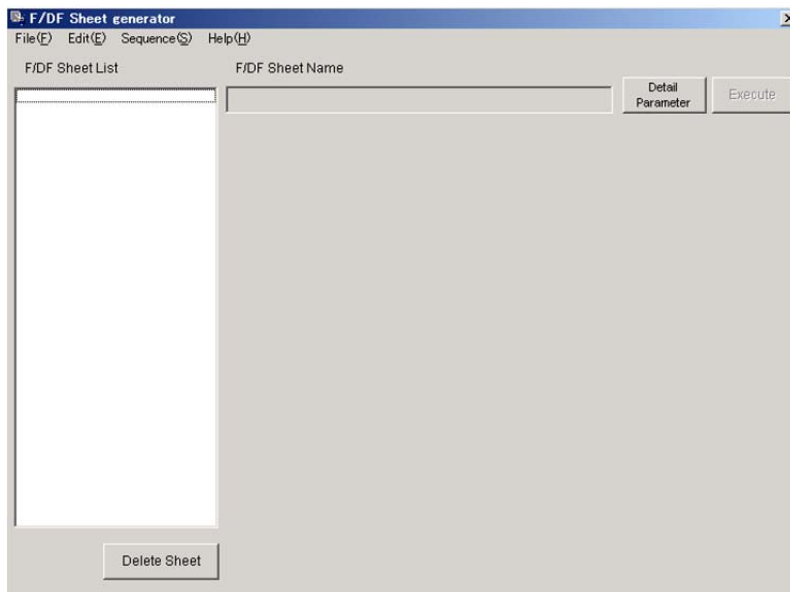
When you complete installing them and if you choose the default setting, they will be registered in [**DTS INSIGHT Tools**], which you can open by selecting [**Start**] → [**Program**].

5 Setting up IP Address to Programmer Main Unit

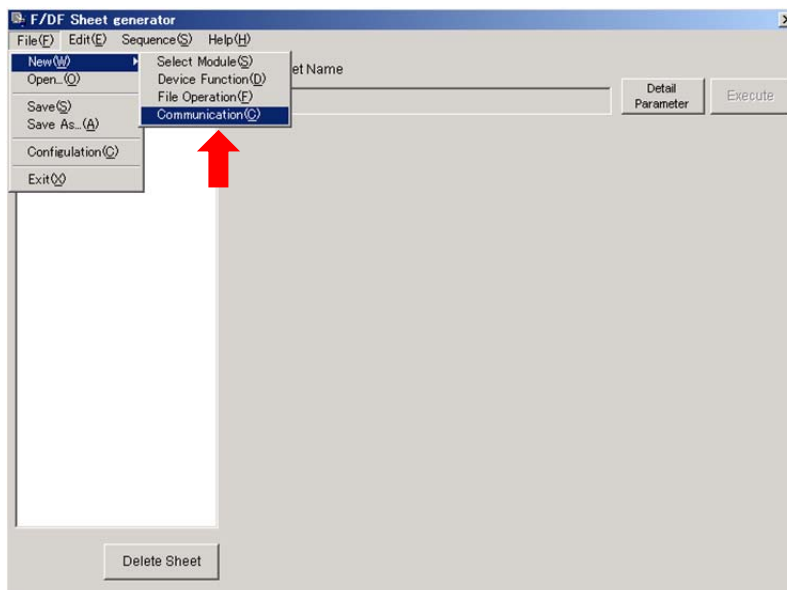
To set up an IP address to the programmer main unit so as to control it via Ethernet from a PC, follow the below steps.

* As a stand-alone, you can set IP address by using FUNC E2 to E4. For how to operate NETIMPRESS as a stand-alone, refer to a chapter “Setting Ethernet” of an instruction manual.

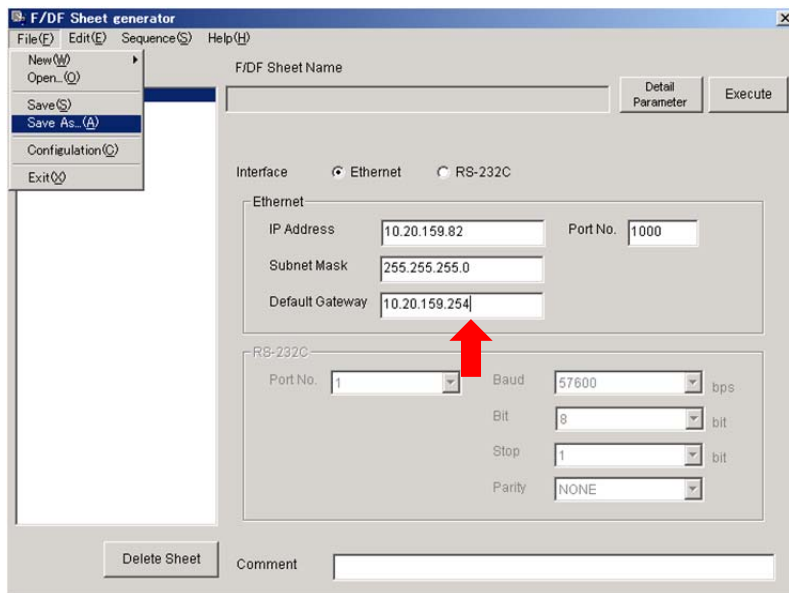
(1) Start up the **AZ482** (F/DF Sheet Generator) that has been installed on your PC.



(2) From the Menu bar, select [File] → [New] → [Communication].



- (3) Enter IP address, port information, etc. to set up in the programmer main unit, and select **[File]** → **[Save As]** and enter a file name with extension “.ycm” to save. (This file name can be changed.)

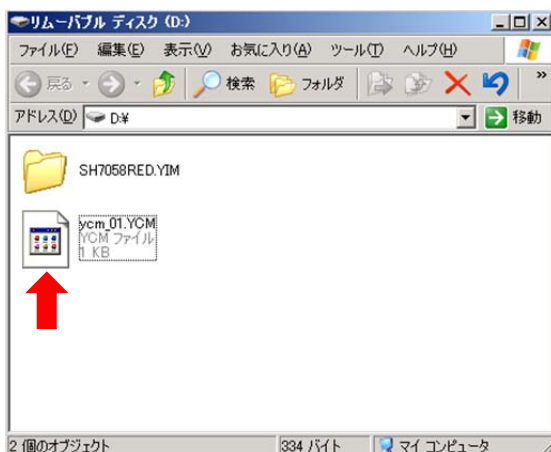


Note:

[Default Gateway] does not have to be set up in most cases, just enter “0.0.0.0”. When using the NETIMPRESS via a router, enter an address of the router.

* Enter 1000 for Port No. if there is no problem on the network.

- (4) Copy the xxx.ycm file you created to right underneath the drive of the Control Module (CF card) by using the card reader of the CF card.



- (5) Insert the Control Module into the slot of the NETIMPRESS main unit and turn on the power.
- (6) The message “YCM DATA SET?” is displayed on the LCD of the NETIMPRESS main unit. Then, press either “**EXE1**” or “**EXE2**”. (For Mega/C”arNETIMPRESS , press **EXE1** and **EXE2**, both of them are the user-defined keys with no names.)

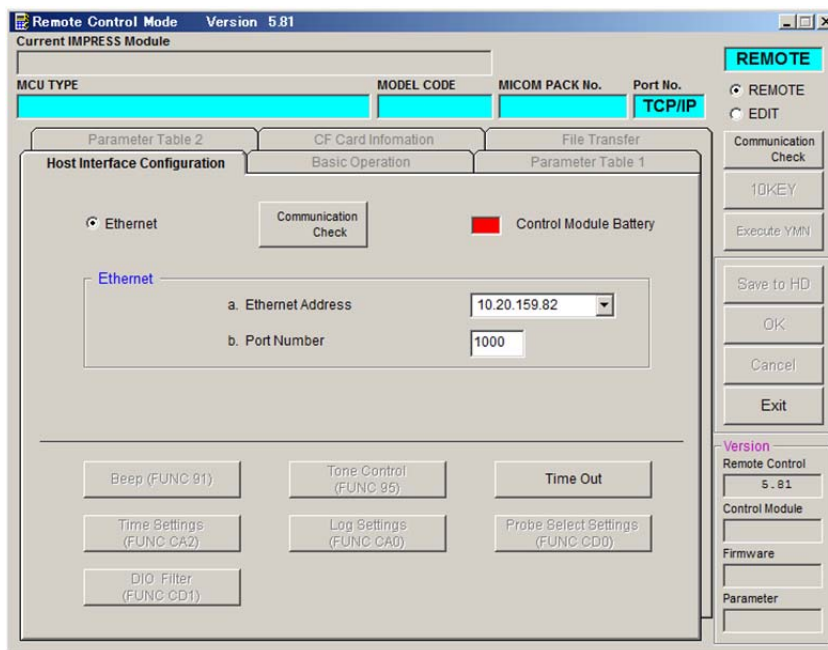
The IP address information is set up in the NETIMPRESS and displayed on the LCD.
Then, the NETIMPRESS main unit is started.

6 Connecting with a PC (AZ490 Setting Remote Controller)

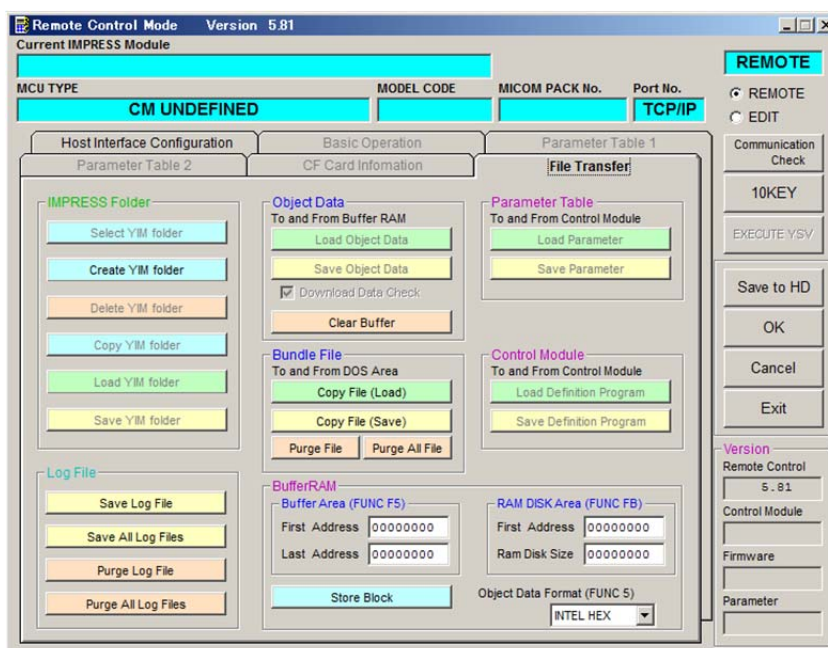
To set up environments to control the NETIMPRESS from the Remote Controller AZ490, follow the steps below.

- (1) Start the AZ490.
- (2) Enter IP address and port number of the NETIMPRESS main unit and press

Communication Check.



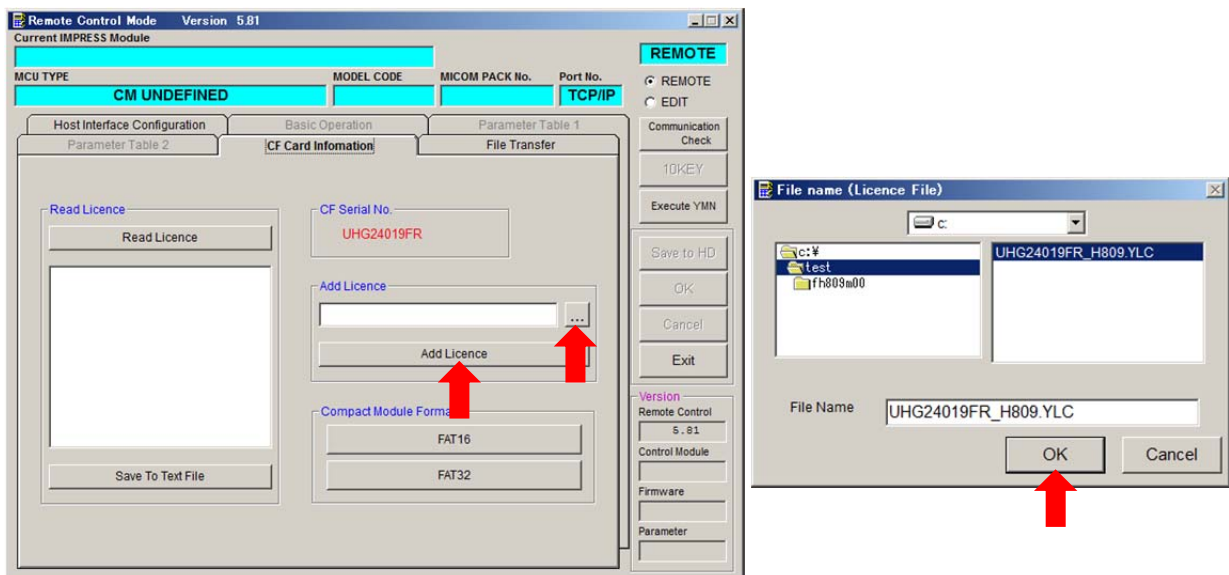
When communication is established, the window as shown below (“File Transfer”) appears. Then, communication between a PC and the NETIMPRESS main unit can be started.



7 Adding a Licence to the Control Module

To add a licence to the Control Module, follow the steps below.

- (1) Click button in the **Add Licence** field located in the center of the CF Card Information tab.
- (2) File selection window is shown. Select the licence file (xxx.YLC) that is provided in the form of CD-ROM, and then click button.
- (3) Click in the **Add Licence** field. Then the licence is added into CF card.



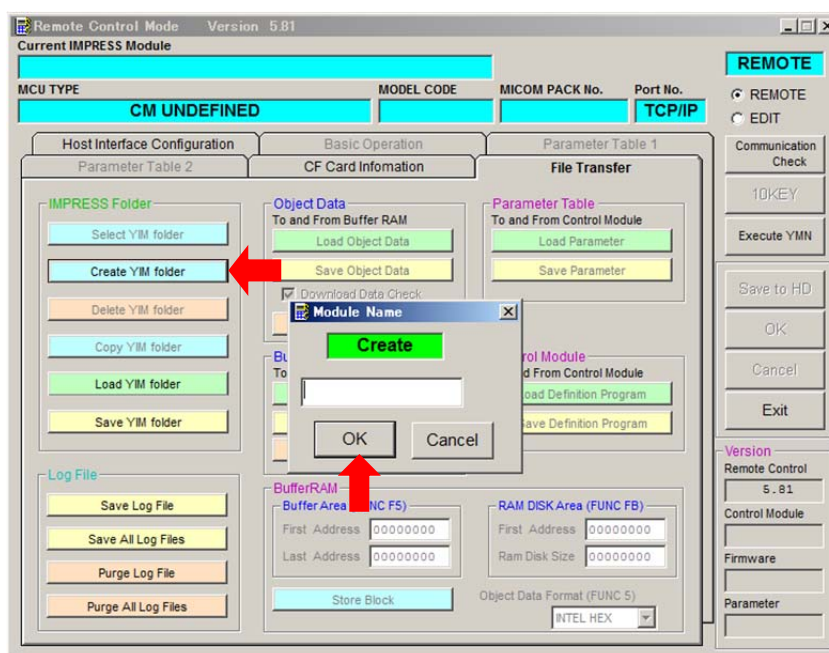
- * The added licence information is written in the special area in CF card. The licence information will remain even if you format the CF card.

8 Creating Impress Module Folder (YIM)

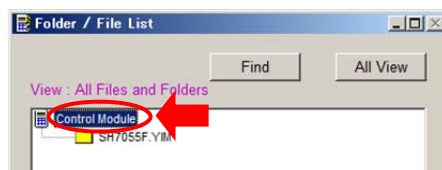
With the Control Module, you can save and maintain a programming object and programming environments data in a folder called Impress Module folder (YIM). When you finish adding a license, create the YIM folder and set up programming environments.

How to create YIM folder

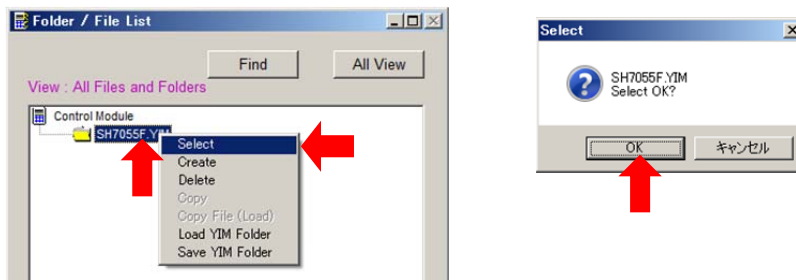
- (1) Click **Create YIM folder** in the **IMPRESS Folder** at the upper left of the File Transfer tab. (As the Module Name dialog window appears, enter any name and click **OK**).



- * In case that Create YIM folder button is dimmed, click **[Control Module]** which you can find at the top of tree view on **Folder/File List** window.

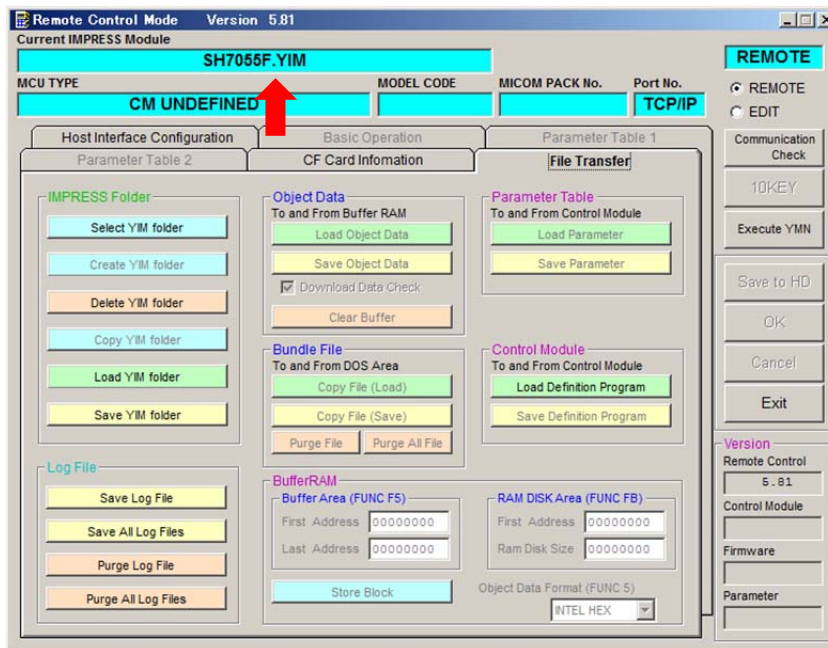


- (2) The name of YIM folder you have created is displayed in the **Folder/File List** window. Then, right-click on the YIM folder you have created and select **[Select]** → **[OK]**.



- * You can select the folder by double-clicking the folder on the tree view of **Folder/File List** window, or clicking **Select YIM Folder** on the main window.

- (3) The YIM folder you have selected in Step 2 becomes the current folder and its name is displayed at the top of the AZ490.



What is the Current folder?:

The files are loaded and the device functions are executed using the current folder. When various setup files are loaded to the Control Module, they are copied to the current folder.

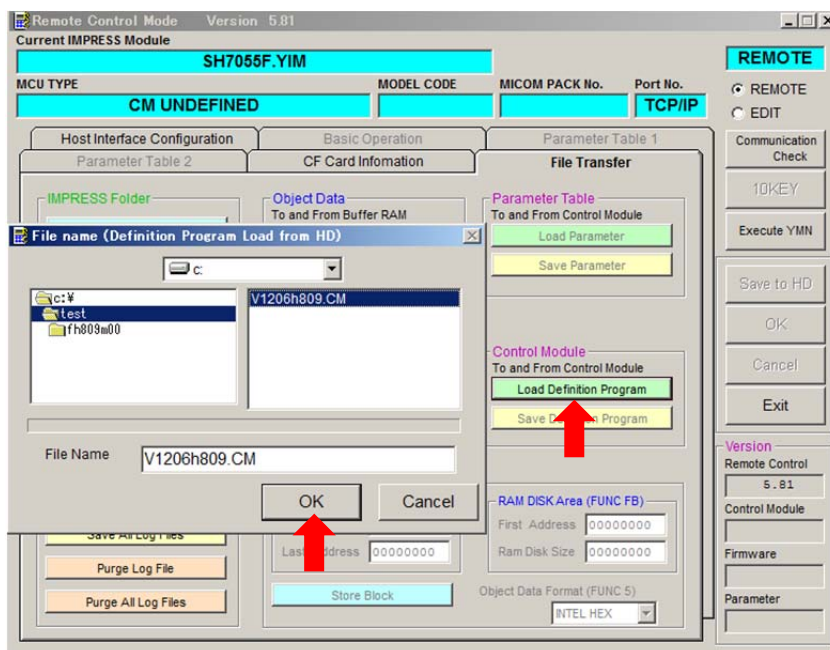
9 Downloading Files and Setting Programming Environments

This chapter explains the steps to download the various files to set up programming environments to the current YIM folder.

It also explains how to download the definition program (extension: CM), parameter (extension: PRM), and bundle files.

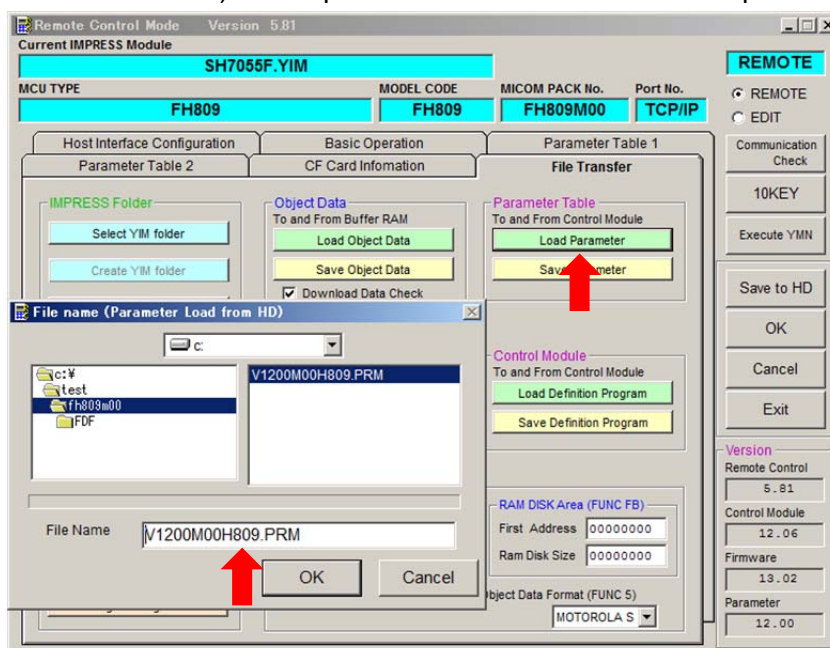
(1) Downloading the Definition Program

Click the **Load Definition Program** in the **Control Module** field to load the Definition Program file (with extension CM) that is provided in the form of a CD-ROM.



(2) Downloading parameters

Select the **Load Parameter** in the **Parameter Table** field to load the parameter file (with extension "PRM") that is provided in the form of a Micom pack download from our Website.

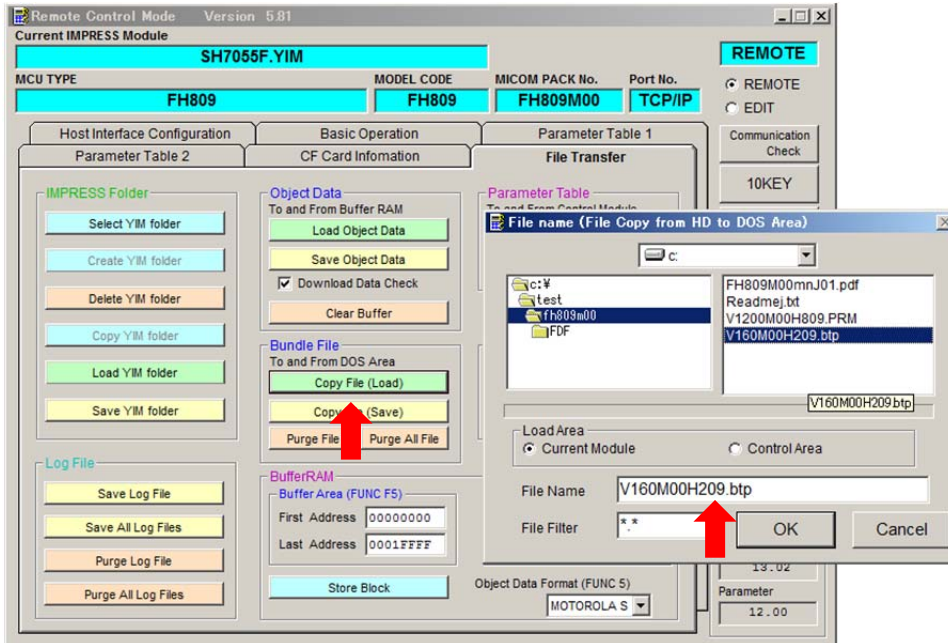


(3) Downloading the bundle files

Download the bundle files that are required for programming by pressing the **Copy File(Load)** in the **Bundle File** field.

The KEY file, BTP file and AMK file are the major bundle files.

* Since the bundle files to be provided differ depending on each device, check with the manual of the Control Module you use.

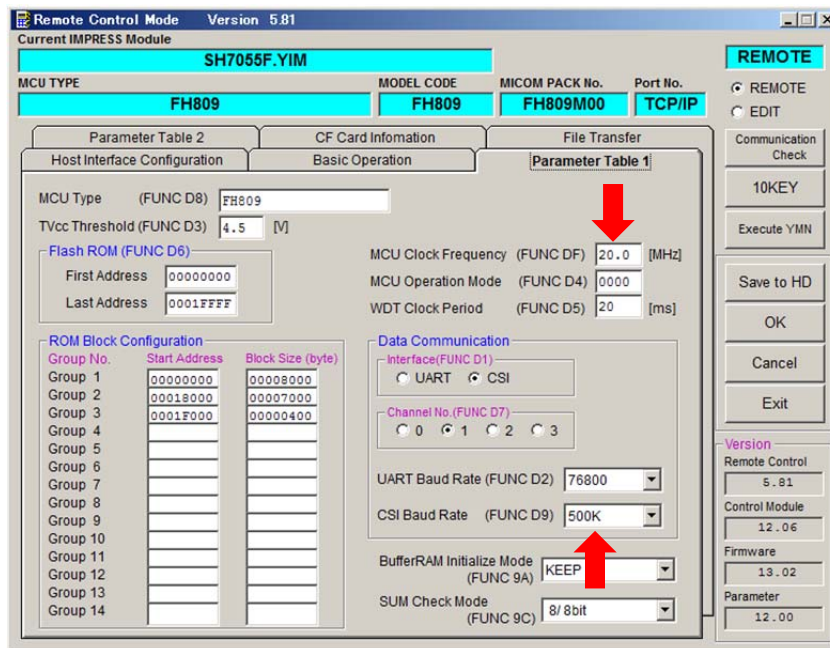


(4) Setting up parameters

The parameters you have downloaded in Step 2 are the default values and you need to modify them according to your environments.

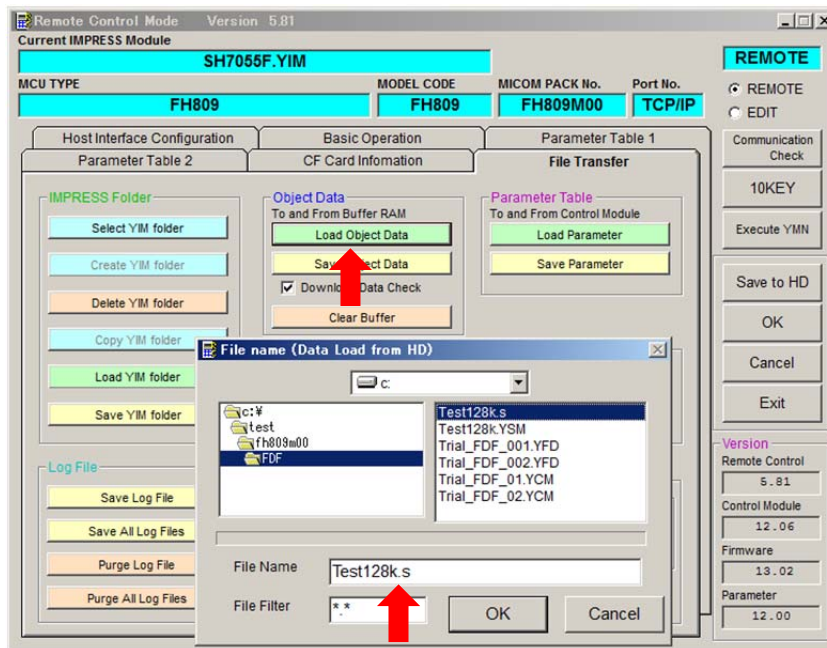
Open the Parameter Table 1 tab and make the settings. For details, see the Manuals for Control Module and Micom-Pack. The parameters you need to modify are operating voltage, clock, communication baud rate, etc.

* If you change the setting on this window, click button at the center of right side to reflect the settings.



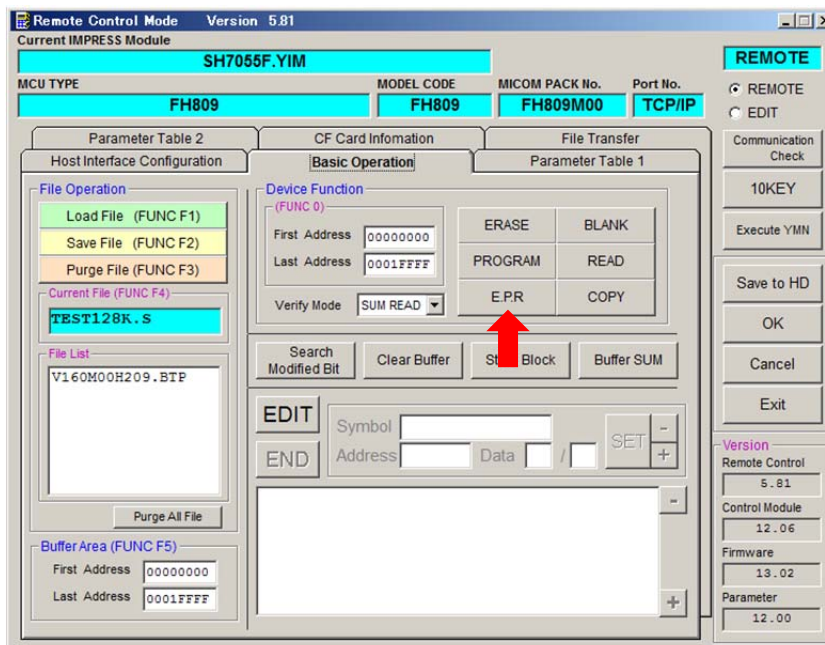
(5) Downloading a programming object

As you finish Step 1 to Step 4, most of programming environments are now set up. Then, the next step is to download a programming object by clicking **Load Object Data** on the **Object Data** field.



(6) Executing the device function

As you complete setting up programming environments and downloading a programming object, all preparations for programming are done. You can now start programming by executing the device functions (E.P.R normally) on the Basic Operation tab.



* E.P.R is a command to do a sequence of actions of delete, write, and read-check (verify) the flash memory.

10 Using the Remote Controller AZ490

By using the Remote Controller AZ490, you can download the various files, set up programming environments and execute the device functions.

The screen of the AZ490 consists of the following six tabs.

- Host Interface Configuration tab to connect with the programmer
- Basic Operation tab to execute the device functions
- Parameter Table 1 tab to set up parameters
- Parameter Table 2 tab to set up parameters, which is not user accessible.
- CF Card Information tab to display CF card information, add licenses, and to format.
- File Transfer tab to transfer the files

Among these six tabs, this chapter explains the three tabs mostly used:

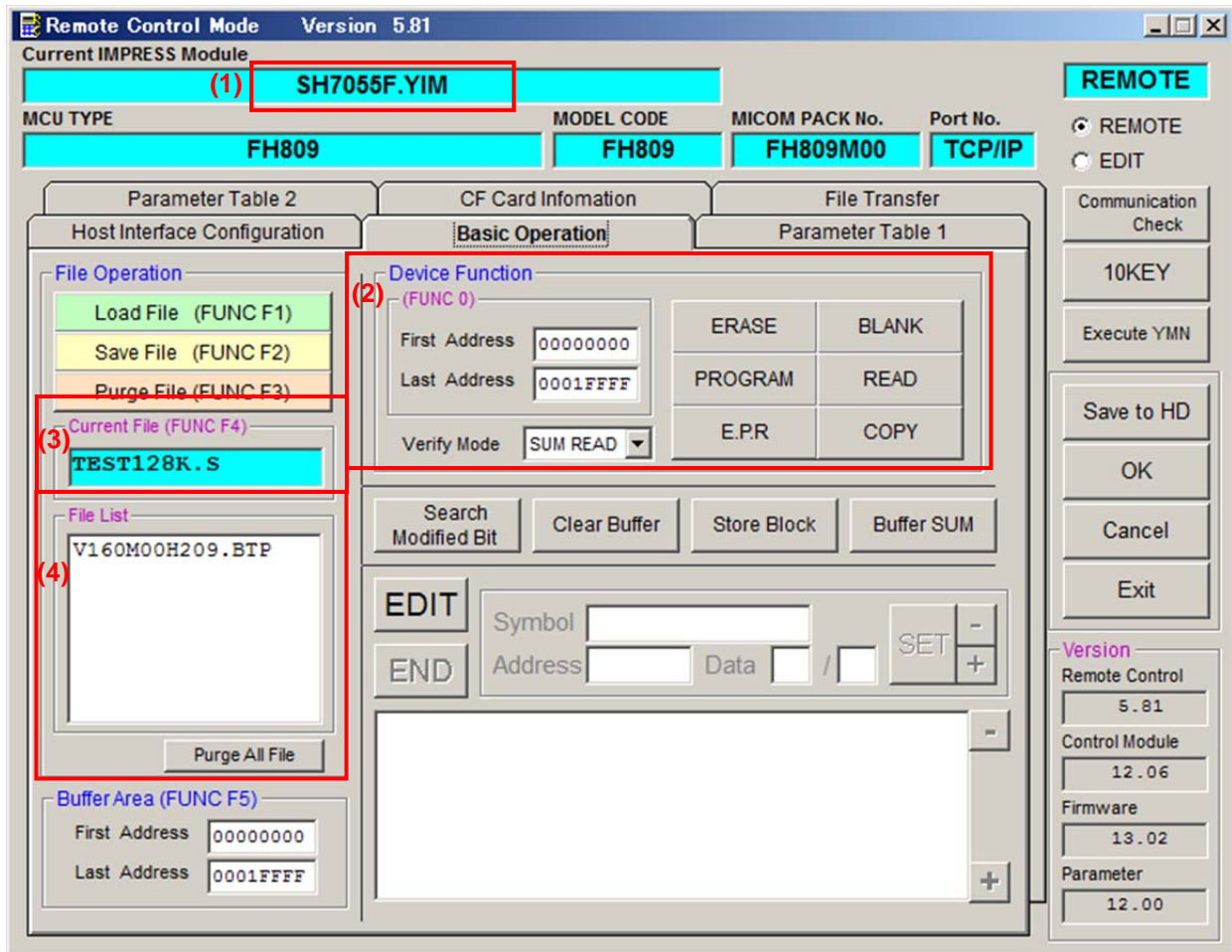
1. Basic Operation--- Device function execution window

2. Parameter Table 1 --- Parameter setting window

3. File Transfer --- File transfer window

10.1 Basic Operation tab

The Basic Operation tab is mainly used to execute the device functions.



(1) Current IMPRESS Module

The name of YIM folder currently selected is displayed. (“SH7058RED.YIM” is displayed in the above example.)

(2) Device Function

With this Device Function field, you can execute the various device functions.

(3) Current File

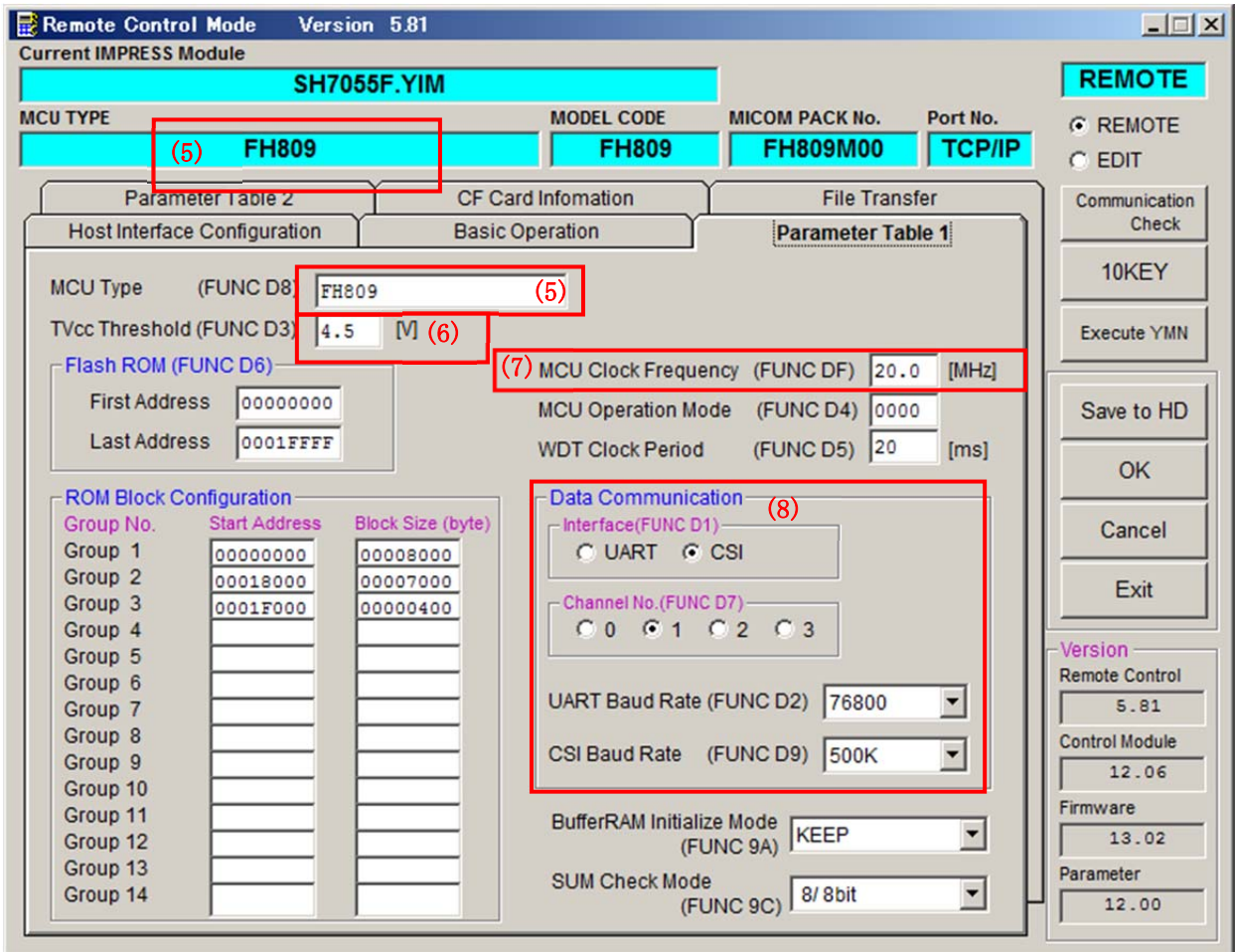
File name loaded by clicking Load Object Data in the **Object Data** of the File Transfer tab is shown.

(4) File List

The files placed in the YIM folder (DOS area) currently selected are listed in the File List field. The bundle files are listed. These are the files of objects that have been copied by clicking Copy File(Load) in the **Bundle File** of the File Transfer tab.

10.2 Parameter Table 1 tab

The Parameter Table 1 tab is used to make the programming settings according to your environments.



Remote Control Mode Version 5.81
Current IMPRESS Module

SH7055F.YIM

MCU TYPE: (5) FH809 MODEL CODE: FH809 MICOM PACK No.: FH809M00 Port No.: TCP/IP

Parameter Table 2 CF Card Information File Transfer

Host Interface Configuration Basic Operation **Parameter Table 1**

MCU Type (FUNC D8): FH809 (5)

TVcc Threshold (FUNC D3): 4.5 [V] (6)

Flash ROM (FUNC D6):
First Address: 00000000
Last Address: 0001FFFF

(7) MCU Clock Frequency (FUNC DF): 20.0 [MHz]

MCU Operation Mode (FUNC D4): 0000
WDT Clock Period (FUNC D5): 20 [ms]

ROM Block Configuration

Group No.	Start Address	Block Size (byte)
Group 1	00000000	00008000
Group 2	00018000	00007000
Group 3	0001F000	00000400
Group 4		
Group 5		
Group 6		
Group 7		
Group 8		
Group 9		
Group 10		
Group 11		
Group 12		
Group 13		
Group 14		

Data Communication (8)

Interface(FUNC D1):
 UART CSI

Channel No.(FUNC D7):
 0 1 2 3

UART Baud Rate (FUNC D2): 76800

CSI Baud Rate (FUNC D9): 500K

BufferRAM Initialize Mode (FUNC 9A): KEEP

SUM Check Mode (FUNC 9C): 8/8bit

REMOTE
 REMOTE
 EDIT

Communication Check
10KEY
Execute YMN
Save to HD
OK
Cancel
Exit

Version
Remote Control: 5.81
Control Module: 12.06
Firmware: 13.02
Parameter: 12.00

(5) MCU Type

The default device name is displayed, which can be changed.

The name set up here will be displayed in the LCD of the NETIMPRESS main unit. ("FH809" is displayed in the above example.)

(6) TVcc Threshold

This is used to check whether the power of a target is turned on when the device functions are executed. Enter a value of about 90% of a target power supply voltage.

(7) MCU Clock Frequency

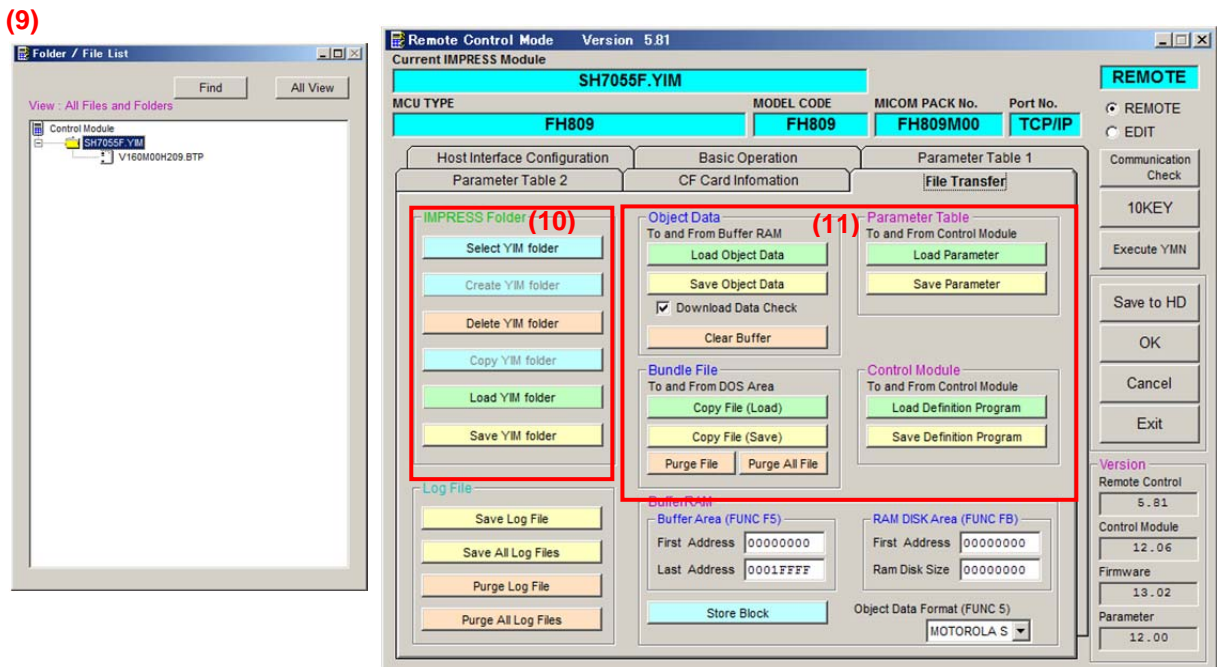
Enter operation clock of a target.

(8) Data Communication

This field is used to set up communication between a device and the NETIMPRESS programmer. Specify communication interface (UART or CSI) and set up baud rate.

10.3 File Transfer tab

The File Transfer tab is used to add a license, transfer a file required to set up programming and a programming object, and work with a YIM folder (create/select/copy/delete).



(9) Folder/File List Window

This field is used to display YIM folder and other files to create, select, copy or delete them. YIM folders you have created are listed. (“SH7055F.YIM” is displayed in the above example.)

(10) IMPRESS Folder

This field is used to operate YIM folder and other files selected in **Folder/File List** Window. For NETIMPRESS next, YIM folder of programmer can be saved on PC, or also you can transfer YIM folder in PC by clicking a button on this field.

(11) File Transfer

Object Data: This field is used to transfer an object to program to buffer memory and save contents of buffer memory to a PC.

Bundle File: This field is used to transfer the bundle files to the programmer and save them in a PC.

Parameter Table: This field is used to transfer a parameter file (PRM) to the programmer and save it in a PC.

Control Module: This field is used to transfer the definition program (CM) to the programmer and save it in a PC.

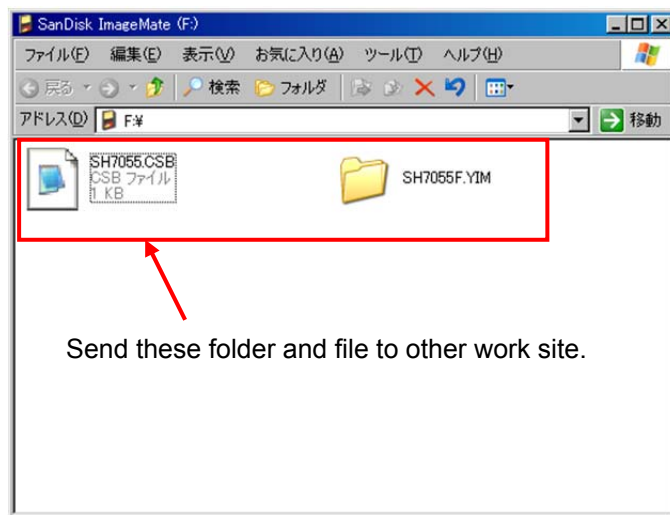
11 Impress Module Folder (YIM)

11.1 Folder Management

With the Control Module, you can save and maintain a programming object and programming environments data in a folder called Impress Module folder (YIM). The YIM folder created in the Control Module can be saved in a PC using the card reader, for example. You can build up exact same programming environments by sending the YIM folder to other work site to provide work instructions.

Note:

To share information by sending the YIM folder, the license for the same definition program has to be registered with the programmer.



EXE1, EXE2

YIM folder:

For details about the YIM folder, see Instruction Manual, Section 5.5 “Impress Module Folder Related”.

.csb file:

For details, see Instruction Manual, Section 6.1.2 “EXE Key Setting”.

By just sending the above two files to other work site, exact same programming environments can be built up.

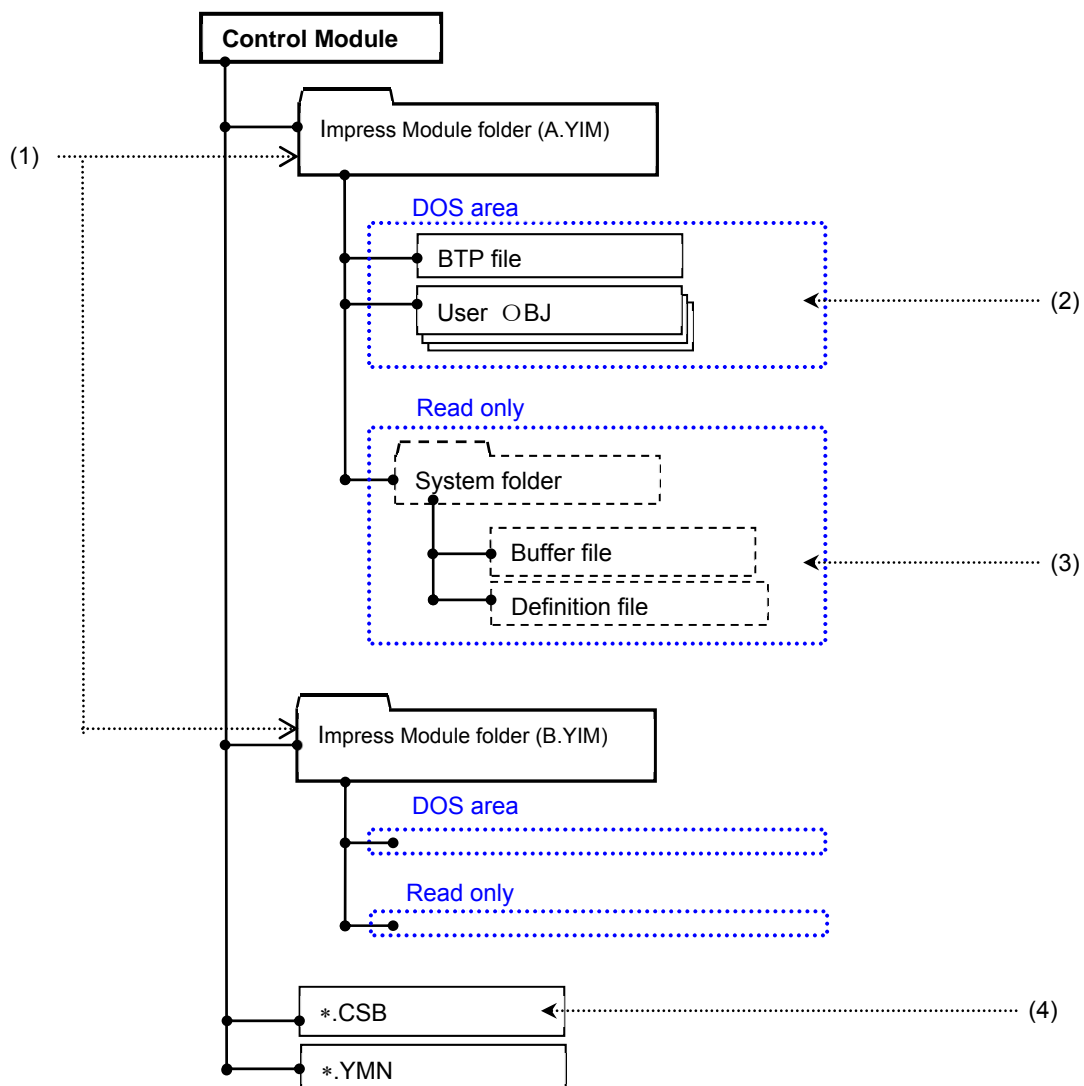
11.2 Folder Configuration

- (1) You can create more than one YIM folder in the compact flash and switch them with the function key. For details, see Chapter 8 “Creating Impress Module Folder (YIM)”, Step (2).
- (2) BTP(*.BTP) file and a user OBJ such as *.KEY, *.YSM, etc. are saved in the DOS area.
- (3) The buffer file (BUF.SYS) and the definition file (CM.SYS) of each one type are saved for YIM folder you have created.
- (4) Since CSB file is placed right under the control module as shown below, only one CSB file can be used for one control module.

*For a file you have downloaded by pressing the Object Data button, you can switch it between keeping and clearing of Buffer RAM with [FUNC 9A]. For details, see the Instruction Manual.

*You can view the file configuration on the window of the Remote Controller just as you work with Windows File Explorer.

(You cannot see the read-only area from REMOTE window.)



12 Key File

The security function is built in the firmware of a flash microcomputer to prevent a third person from reading and writing ROM illegally.

As the mechanism of the security function, a specific area of flash memory is set as an area to store an ID code, and whenever access is tried from a serial programmer, the same data with ID data written to the microcomputer is sent to the microcomputer as an ID code, and if they are found not matching, the access is not allowed. Therefore, access can be made only when you know what ID data is written to the microcomputer.

1. KEY file

The Key file is used to automatically issue an ID code to a microcomputer and unlock the security when the programmer executes the device functions. Address where ID data is stored, ID data size and value are saved in the Key file.

Download the Key file using the **Copy File(Load)** on the **Bundle File** field on the File Transfer tab and place it in the **YIM folder**.

2. Security methods (Common)

You can execute the standard security function in the following two ways:

- Specify security ID address and ID size.
- Specify only a range of security ID and select any address within a specified address range, and if data value of several bytes are matching, the security function is unlocked.

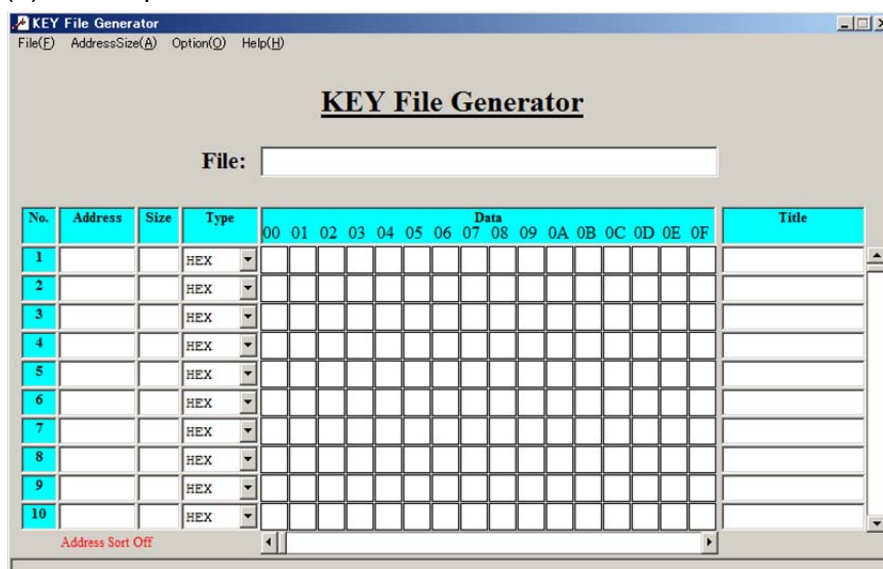
* Since specifications of the security function differ depending on a microcomputer of each type, see the manual of the Micom Pack you use.

■ Creating a Key file

You can create a Key file using the Key File Generator AZ481.

To create a Key file, perform the following steps.

(1) Start up the AZ481.



13 SUM Check Function of YSM file

This function is used to check a SUM value of data whenever executing the device functions so as to prevent programming illegal object data. **This function is very useful in case data of an object to program is garbled all of a sudden.**

By saving a SUM value of an object in YSM file, data is automatically checked by the NETIMPRESS.

When execution of the device functions is completed, a SUM value in YSM file is compared with a SUM value at a time of execution of the device functions. In case they are not matching, it results in an error with the message “YSM CHECK ERROR”.

Download YSM file using the of **Bundle File** on the File Transfer tab and place it in the **YIM folder**.

■ Creating a YSM file

To create YSM file, perform the following steps.

(1) Start up the Key File Generator AZ481.

(2) Create YSM file

Select [**Address Sort Off**] from Option on the menu bar, and enter the data. (Basically, enter only No. 1 and No. 2 lines.)

No.1: **Enter SUM value**

No.2: **Flag to Check SUM/Do not check SUM**

No. 1: data

Address = 00000000 (Fixed)

Size=1 (Size of SUM. For 1byte, enter “1”, for 2byte, enter “2”.)

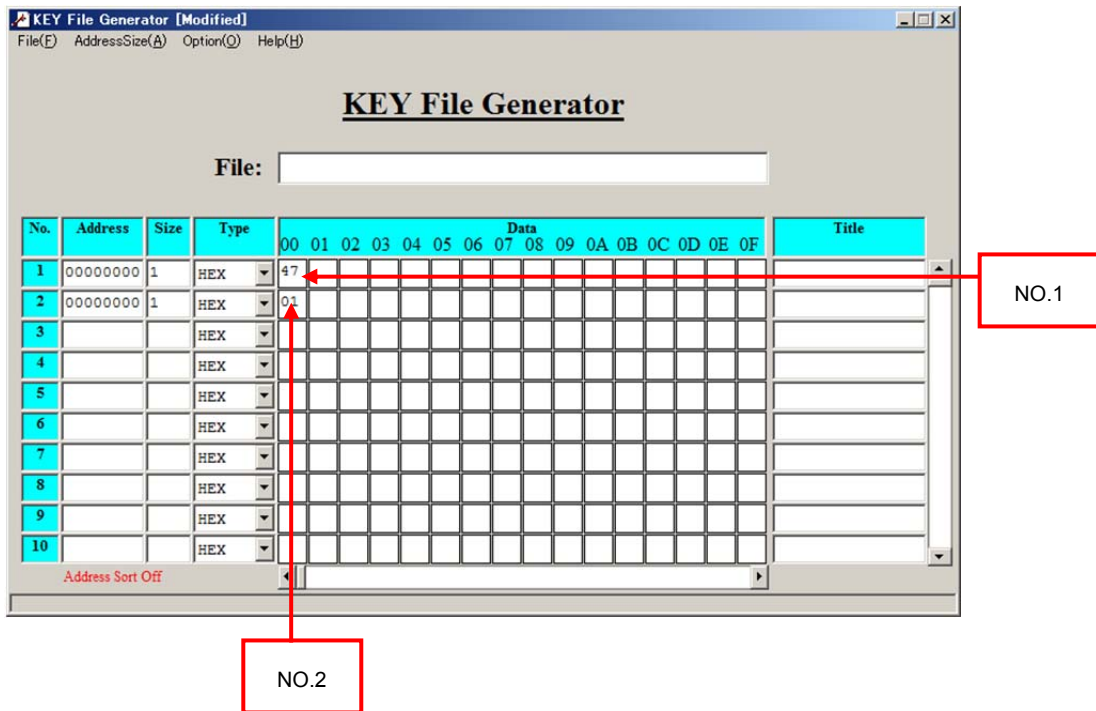
Data = SUM (Calculate SUM value by using “BufferSUM” of Basic Operation of AZ490)

No.2: flag

Address = 00000000 (Fixed)

Size = 1 (Fixed)

Enter Data = " 01 " or " 00 " (Check SUM = 01, Do not check SUM=00)



* For SUM check of YSM file, there is also a function to check the data in the certain area of buffer memory. It is useful to check the version of file. For details, see a manual of NET IIMPRESS main unit.

(3) Save YSM file

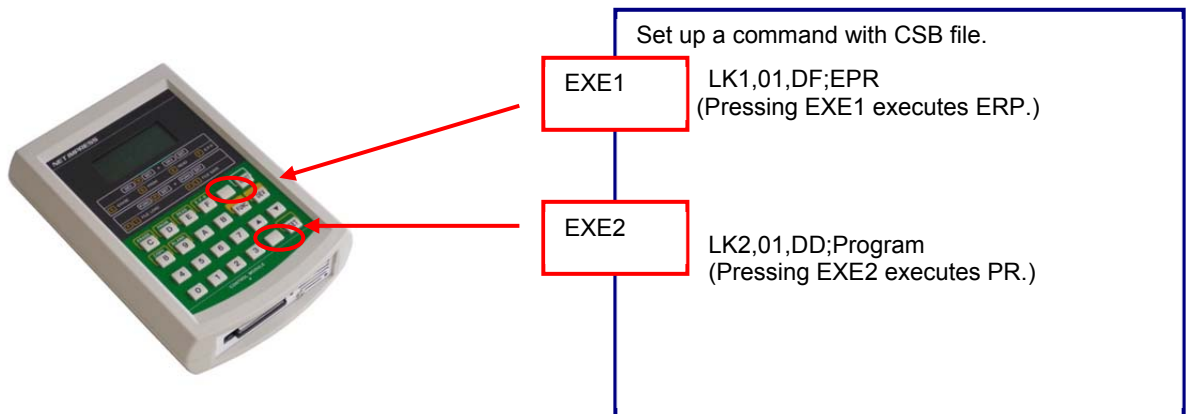
Select [File] → [File Save]. Then, save the YSM file.

Select YSM File(*.YSM) for the file type.

* Note that YSM file name has to be the same name with an object.

14 CSB File

A CSB file is used to execute command sequence. Execution sequence of a CSB file is assigned to the two EXE keys on the upper part of the NETIMPRESS main unit.



■ About the specifications of a CSB file

A CSB file can be edited with a text editor. After editing, specify any name and save it with extension "csb".

Only one CSB file can be placed in the root directory of the Control Module. Up to 16 commands can be assigned.

■ About the format of a CSB file

The table below lists the format to set up a CSB file.

(1)	(2)	(3)		(4)						(5)	(6)	
LK1	,	CNT	,	C1	,	C2	,	...	,	C16	;	Comment
LK2	,	CNT	,	C1	,	C2	,	...	,	C16	;	Comment

(1) KEY No: LK1 = EXE1, LK2 = EXE2

(2) ", "(1byte): Command delimiter

(3) CNT: the number of commands executed (in decimal)

(4) Command

(5) "; "(1byte): Comment delimiter

(6) Comment: Describe comment (Any byte size + CRLF)

* **Break is necessary at the end of line of LK2.**

* If you cannot allocate the function to neither EXE1 nor EXE2, set 00 the number of execution command (CNT). You cannot omit the whole line starting with LK1 or LK2.

■ About CSB file

(1) Sample 1 (the standard sample: Test.csb)

The standard CSB file named “Test.csb” is provided, which contains the following.

- Sequence to be executed:

EXE1= Execute ERP

EXE2= Execute PR

* To execute the above command sequence, a YIM folder has to be selected in advance.

LK1,01,DF;EPR

LK2,01,DD;Program

(2) Sample 2

- Sequence to be executed:

EXE1 = Load a specified YIM folder

EXE2 = Execute ERP

LK1,01,FB0 (SH7058RED.yim);CHANGE YIM

LK2,01,DF;E.P.R

When “EXE1” is pressed, SH7058RED.YIM is loaded as a current IMPRESS Module.

When “EXE2” is pressed, EPR is executed on contents of SH7058RED.YIM to a target.

(3) Sample 3:

- Sequence to be executed:

EXE1 = Program the two YIMs continuously

EXE2 = Execute Erase

- This command sequence can be used in the following two cases:
 - To program external flash memory dividing in two parts of the first half and second half
 - To program both of internal flash memory and external flash memory on a board connected with external flash memory connected to a microcomputer

LK1,04,FB0(SH7750R01.yim),DF,FB0(SH7750R02.yim),DF;2file sequence EPR

LK2.01.DC;Erase

- When “EXE1” is pressed:
 - SH7750R01.YIM (the **first half** of **external flash memory**) is loaded as the current IMPRESS Module.
 - EPR is executed on contents of SH7750R01.YIM to a target.
 - SH7750R02.YIM (the **second half** of **external flash memory**) is loaded as the current IMPRESSSS Module.
 - EPR is executed on contents of SH7750R02.YIM to a target.
- When “EXE2” is pressed:
 - Flash memory of a target is erased.