

**Control Module  
Instruction Manual**

**Control Module  
For  
Flash Microcomputer Programmer**

**NET IMPRESS  
(MegaNETIMPRESS/C"arNETIMPRESS)**

**FR805**

**DTS INSIGHT CORPORATION**

**FR805 (R5F21238)**

**Instruction Manual**

**No. M2389YL-02\_eng**

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## 1 Overview

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The FR805 is the Control Module for MegaNETIMPRESS or C"arNETIMPRESS (collectively "NET IMPRESS"), the advanced on-board flash microcomputer programmer.

The Control Module FR805 supports programming the flash ROM inside Renesas Electronics R5F21238 and other equivalent flash microcomputers that have the same programming algorithm and protocol as Renesas Electronics R8C/3x series.

The Control Module FR805 consists of the Compact Flash Card containing the programming control software.

The free area of the Compact Flash Card can be used as the DOS file area to temporarily store your object file created on the host computer.

The Control Module FR805 is available in three types for your choice: /P128, /D128, and /D512. Choose an appropriate type according to capacity of the Compact Flash Card. /P128 and /D128 support up to 128 Mbyte of the Compact Flash Card, and /D512 is for up to 512Mbyte.

With the D type, you can switch between YIM folders in the Control Module.

We have four types of Standard Target Probe Cable, AZ410, AZ411, AZ412, and AZ413.

For other types of target probe cable, contact your local distributor or us.

### **NOTES:**

With the Control Module FR805, you can program microcomputers built in flash memory which have the same programming algorithm and protocol as the virtual target microcomputer.

Check once again if your microcomputer is supported by the Control Module FR805, or if your microcomputer has the same algorithm and protocol as those of the target microcomputer.

Using this product to microcomputers which are not supported may destroy the microcomputer and a user system.

FR802 is designed to support programming microcomputers of a wide range and you can program a microcomputer of different programming voltage (Vpp) by changing parameters.

Be sure to have a good understanding on signal connection by carefully reading Chapter 4 "Connecting to the Target System and Connector" before you use the Control Module.

For a timing to supply the power to the microcomputer, follow the instruction described in Chapter 4 "Connecting to a Target System and Connector" of this manual.

Check the item below.

- (1) Is the microcomputer you are about to use listed on the supported microcomputer list of the Control Module?

Contact your local distributor or us for any questions or unclear points.

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## 2 Specifications

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### 2.1 Target Microcomputer and Specifications

For any items that are not specifically described here, the standard specifications of NETIMPRESS are applied.

Control Module	FR805
Target Microcomputer	Defined by Micom Packs FR805Mxx *1
Flash Memory Capacity	Same as above *1
Flash Memory Address	Same as above *1
Programming Voltage (Vpp)	Same as above *1
Default	Same as above *1
Vccp (Minimum voltage during programming)	Same as above *1
Object File Format	Intel HEX, Motorola S, Binary
Default	Motorola S
Target Interface	UART mode (clock asynchronous serial communication) interface *1 1-wire serial mode interface 9600/19200/38400/57600/76800/115200/460800/50000 0 bps *2 <input type="checkbox"/> MSB first <input checked="" type="checkbox"/> LSB first
Data Transfer Format between Flash Microcomputer Programmer and Target System	Binary
Memory status when being erased	#FF
MCU Clock during programming	Defined by Micom Packs FR805Mxx *
Voltage of target interface during programming	Defined by Micom Packs FR805Mxx *

\* For details, please refer to the instruction manual of the relevant Micom Pack.

\*1: UART mode (clock asynchronous serial communication) and 1-wire serial mode are supported, which can be switched with the parameter file. For details about the parameter file, see the relevant Micom Pack Manual.

\*2: These baud rates may not be able to be used depending on a target frequency. For details, see Section 2.4 "Baud rate".

## 2.2 Setting Up Specific Parameters

Complete initial setup by using AZ490, the remote controller running on Windows. For the operating instructions of AZ490, see the AZ490 Instruction Manual.

### 2.2.1 Parameter Table1 Tab

Set up the parameters for your target microcomputer with the Parameter Table1 tab.

The screenshot shows the 'Remote Control Mode' software interface, Version 5.60. The current module is 'FR805.YIM'. The MCU TYPE is 'FR805', MODEL CODE is 'FR805', MICOM PACK No. is 'FR805Mxx', and Port No. is 'TCP/IP'. The 'Parameter Table 1' tab is active, showing various configuration parameters.

**Parameter Table 1 Configuration:**

- MCU Type (FUNC D8): FR805
- TVcc Threshold (FUNC D3): 2.4 [V]
- Flash ROM (FUNC D6):
  - First Address: 00003000
  - Last Address: 00013FFF
- 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	00003000	00000400
Group 2	00004000	00004000
Group 3	0000C000	00002000
Group 4	0000B000	00001000
Group 5	00010000	00002000
Group 6		
Group 7		
Group 8		
Group 9		
Group 10		
Group 11		
Group 12		
Group 13		
Group 14		
- Data Communication:
  - Interface (FUNC D1):  UART  CSI
  - Channel No. (FUNC D7):  0  1  2  3
  - UART Baud Rate (FUNC D2): 57600
  - CSI Baud Rate (FUNC D9): 500K
  - BufferRAM Initialize Mode (FUNC 9A): KEEP
  - SUM Check Mode (FUNC 9C): 8/ 8bit

On the right side, there are control buttons: REMOTE (selected), EDIT, Communication Check, 10KEY, Select Module, Execute YMN, Save to HD, OK, Cancel, and Exit. A version information box shows Remote Control 5.60, Control Module 12.00, and Firmware 12.40.

### **(1) TVcc Threshold [ FUNC D 3 ]**

Set up a value about 10% lower than the minimum operation voltage of the target microcomputer. NET IMPRESS senses the operation voltage (TVcc) of the target microcomputer and executes the Device Functions when the TVcc gets higher than the specified value.

For the operation procedure to set up TVcc threshold on NETIMPRESS main unit, see the MegaNETIMPRESS/C"arNETIMPRESS Instruction Manual at section 5. 4. 5 "TVcc Threshold Setting".

### **(2) Flash ROM (First Address, Last Address) [FUNC D6]**

Set up the flash memory area (First Address, Last Address) built in the microcomputer.

You cannot set up flash ROM for NET IMPRESS and this is only for display.

For details, see the MegaNETIMPRESS/C"arNETIMPRESS Instruction Manual, section 5. 4. 8 "Flash Memory Area Display".

### **(3) ROM Block Configuration**

Set up the block configuration of flash memory.

<Block Data Table>

The block data table consists of information of three kinds: Group No., Start Address and Block Size.

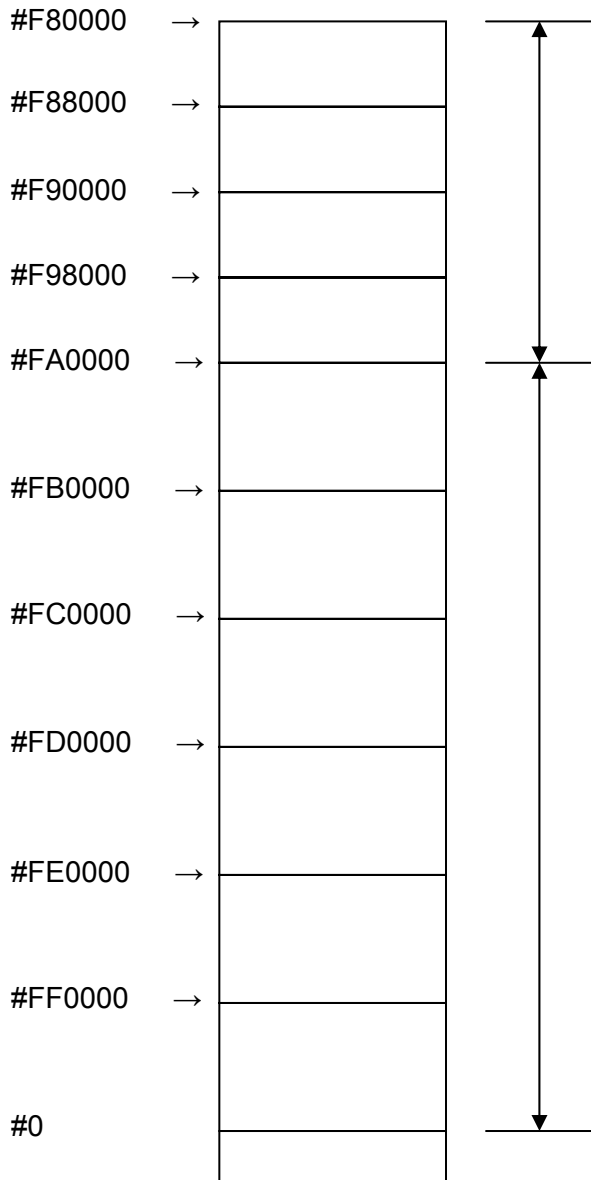
- |                |   |
|----------------|---|
| Group No:      | You can specify up to 14 groups (Group1 to Group 14). A block group consists of memory blocks that have the same one block size on linear address. Group number is determined by the address order starting from lower address. |
| Start Address: | A starting address of a block group.<br>The flash memory of the size specified in the Block Size sequentially continues, forming one block group.   |
| Block Size:    | NET IMPRESS understands that the flash memory blocks of a size specified in the Block Size are placed sequentially until a next block group address.<br>Set the block start address and block size to "0" at the last block.    |



Example:

Group No.	Start Address	Block Size
1	#00F80000	#00008000
2	#00FA0000	#00010000
3	#00000000	#00000000

Block Start Address



**Block Group 1**

The above example shows the flash memory blocks which have 32K block size from #F80000 continues until a next block size starts (#FA0000).

**Block Group 2**

The above example shows the flash memory block that has 64K block sizes from #FA0000 continues until the last address (#FFFFFF) of the flash memory.

**(4) MCU Clock Frequency [ FUNC D F ]**

Sets up the input clock frequency of the target microcomputer.

Do not change the default settings on FR805.

**(5) MCU Operation Mode [FUNC D 4]**

It is not required to set up this item on FR805.

**(6) WDT Clock Period [FUNC D 5]**

NET IMPRESS has the function to output periodic clock pulses during programming. To use this function, it is required to setup the WDT Clock Period.

The periodic clock pulse is output from the WDT signal (No. 18 pin) that is listed in the target probe signal list of section 4.1 "Signal List".

See the MegaNETIMPRESS/C"arNETIMPRESS Instruction Manual, section 5.5.7 "Set Watch Dog Timer" for setting the WDT signal with NET IMPRESS.

## (7) Data Communication

This is the field to make communication settings between NETIMPRESS and the target microcomputer. For the FR805, make complete settings as follows.

- **Communication Channel [FUNC D 1]**

Choose UART (Asynchronous communication).

For the procedures of setting the communication path on NETIMPRESS, see section 5.5.2. Communication Channel Setting on the MegaNETIMPRESS/C"arNETIMPRESS Instruction Manual.

- **Channel No. [ FUNC D 7 ]**

It is not required to set up this item on FR805.

For the procedures of setting the communication channel on NETIMPRESS, see section 5.5.9. Set Communication Channel on MegaNETIMPRESS/C"arNETIMPRESS Instruction Manual.

- **UART Baud Rate [ FUNC D 2 ]**

**Note: This command is not used for FR805 to set up baud rate for UART.**

Use [FUNC 88] to set up baud rate for UART for FR805.

Select from 9600/19200/38400/57600/76800/115200/460800/500000 bps.

- **CSI Baud Rate [ FUNC D 9 ]**

It is not required to set up this item on FR805.

## (8) MCU Type [ FUNC D 8 ]

The setting here will be displayed in the MCU Type field located at the top left of the Remote Control Mode window and NETIMPRESS main unit.

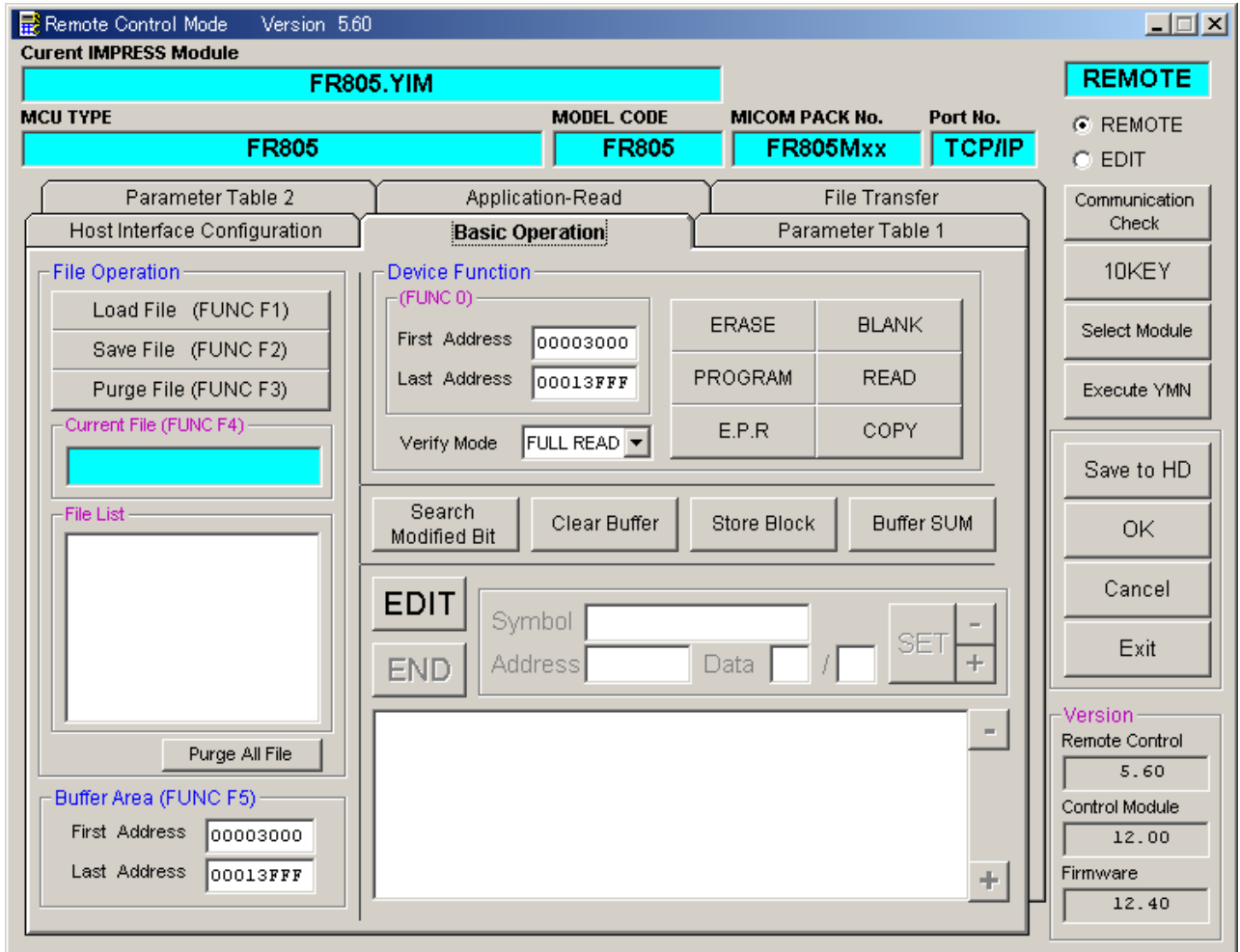
You can enter any characters up to 16 characters such as microcomputer's model name or device name you are using.

## (9) OK

By clicking this OK button, you can send the settings on the Parameter Table 1 tab into the Control Module. Be sure to click the OK button before moving to other tabs so that you can make the changes of (1) – (8) valid. If you do not click the OK button, the changes will not be sent to the Control Module.

## 2.2.2 Basic Operation Tab

With the Basic Operation tab, you have the three features to work with as described below.



### **(1) Device Function [FUNC 0 ]**

Set up a target area to execute the Device Functions such as reading, programming, etc.

Normally, set up the same area as those you set up for the Flash ROM as described in the Section 2.2.1 (2).

The Device Function Address [FUNC 0] is automatically aligned with the block boundary address of the flash memory by its specified address as shown in Figure 2-1. The Device Functions will be executed to this automatically aligned area.

### **(2) Buffer Area [FUNC F 5 ]**

Set up an area to save and load the data on the buffer memory of NET IMPRESS (when you have a binary file). Normally, set the same areas as those for the Flash ROM as described in the Section 2.2.1 (2).

Figure 2-2 shows how the Device Function [FUNC 0], Buffer Area [FUNC F 5] and Flash ROM Area [FUNC D 6] relate with each other.

### **(3) OK**

Click this OK button to send the settings on the Basic Operation tab into the Control Module. When you made changes to the above (1) and (2) settings, be sure to click the OK button before moving to other tabs. If you do not click the OK button, the changes will not be reflected.

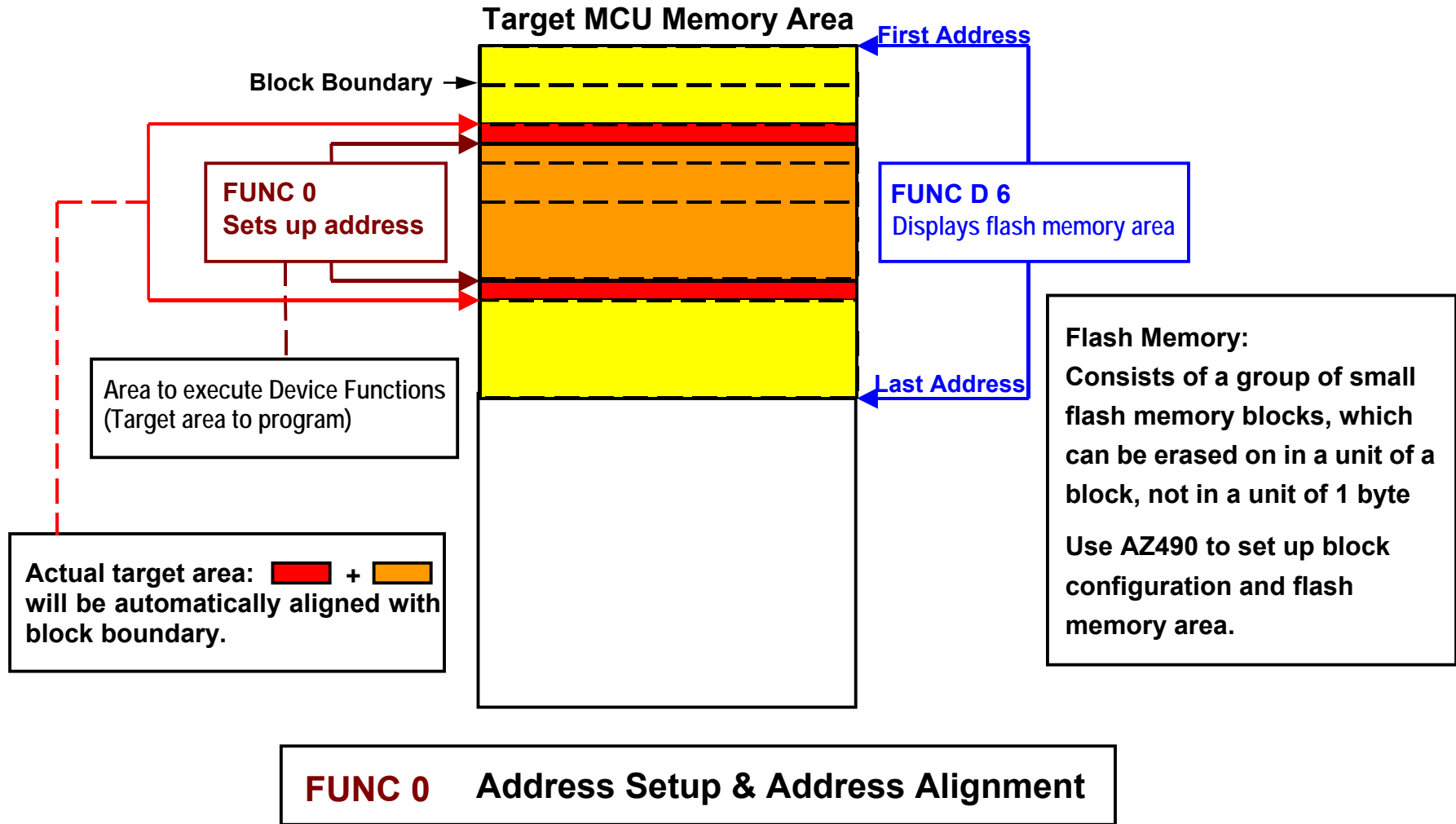


Figure 2-2-2-1

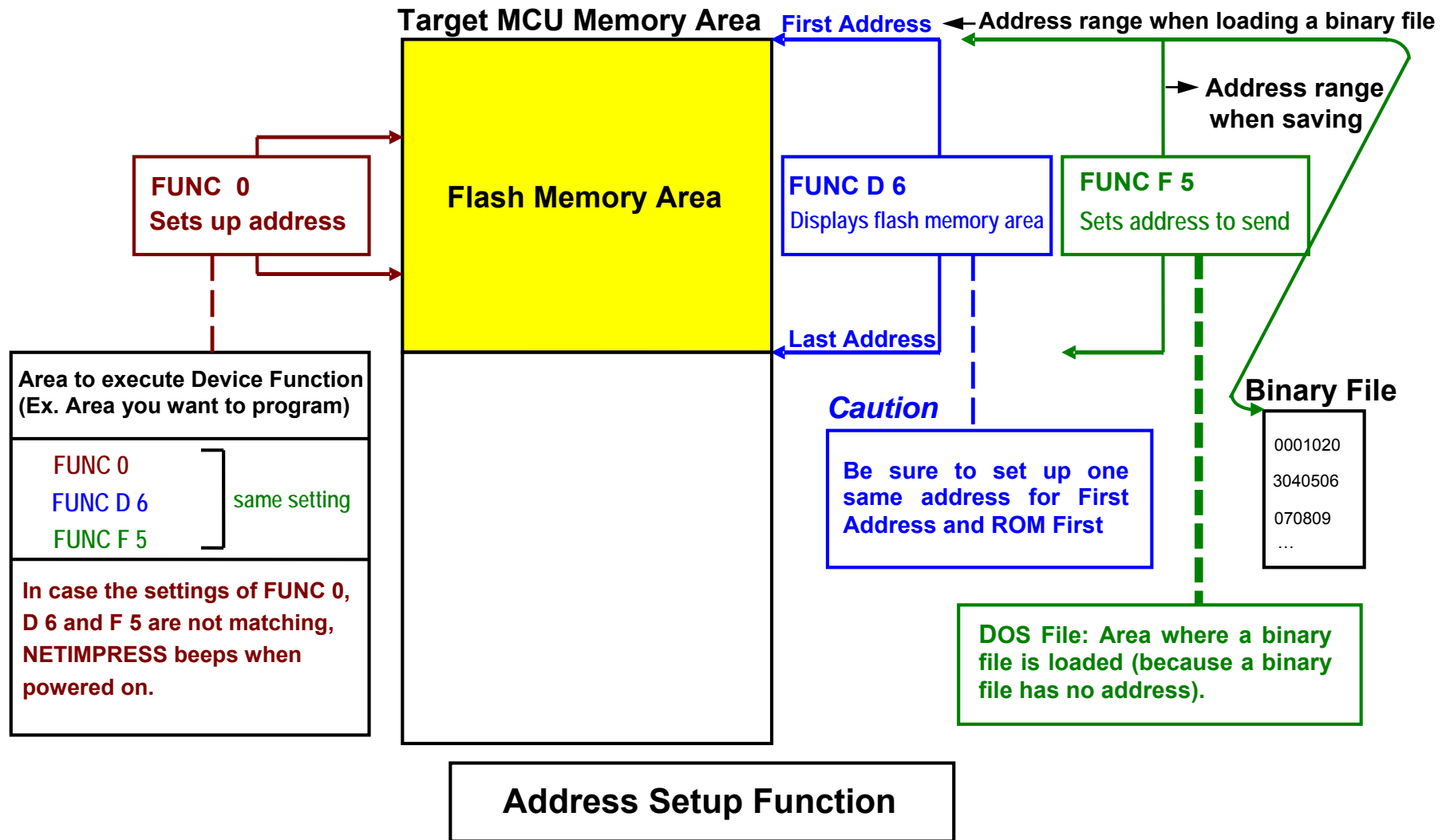


Figure 2- 2-2-2

### 2.2.3 Parameter Table 2 Tab

The Parameter Table 2 tab contains the parameters specific to the microcomputer. Therefore, be sure not to change any value in this window.

**In case you need to change the settings, be sure to consult our support center in advance.**

Remote Control Mode Version 5.60  
 Current IMPRESS Module: **FR805.YIM**

MCU TYPE: **FR805**    MODEL CODE: **FR805**    MICOM PACK No.: **FR805Mxx**    Port No.: **TCP/IP**

Host Interface Configuration    Basic Operation    Parameter Table 1

**Parameter Table 2**    Application-Read    File Transfer

Specific Parameter for this Control Module (FUNC 8X)

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0C0:	00	00	01	00	06	00	00	00	13	88	00	00	80	08	08	EE
0D0:	00	00	00	00	00	00	00	00	00	49	24	92	00	00	00	I\$
0E0:	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00	
0F0:	00	00	00	00	00	00	00	00	52	38	30	35	00	00	00	R805
140:	02	02	01	00	00	00	00	00	00	00	00	00	00	01	01	

**- WARNING -**  
 These parameter should not be changed.  
 Contact to YDC in details.

Version: Remote Control 5.60, Control Module 12.00, Firmware 12.40



## 2.3 Device Functions and Their Operation

The table below lists the operations to the flash memory that are executed when NETIMPRESS starts the Device Functions.

Device Function		ERASE	BLANK CHECK	PROGRAM	READ	E.P.R	COPY
Target Memory Area	A partial areas of flash memory by [FUNC 0] command (with Block Alignment)	Executed	Executed	Executed	Executed	Executed	—
	Entire area of flash memory by [FUNC D6] command	Executed	Executed	Executed	Executed	Executed	Executed
Operation executed to Flash Memory		<input checked="" type="checkbox"/> Erase <input checked="" type="checkbox"/> Blank *2	<input checked="" type="checkbox"/> Blank	<input type="checkbox"/> Erase <input type="checkbox"/> Blank <input checked="" type="checkbox"/> Program <input checked="" type="checkbox"/> Read *1	<input checked="" type="checkbox"/> Read	<input checked="" type="checkbox"/> Erase <input type="checkbox"/> Blank <input checked="" type="checkbox"/> Program <input checked="" type="checkbox"/> Read *1	<input checked="" type="checkbox"/> Copy <input checked="" type="checkbox"/> Read

\*1: For the Read Verify operation that is executed by the Device Functions "E.P.R" and "PROGRAM", the Read Verify set up with the Read Mode Switching (FUNC 99) is executed. To set up the Read mode with NETIMPRESS, see section 5.5.16 Read Mode Switching (Function 99) on NETIMPRESS instruction manual.

(1) SUM READ VERIFY: A SUM value of the area where the Device Function "PROGRAM" is executed (8-bit addition, one's complement of a value which 16-bit overflow is ignored) is read from the microcomputer and compared with a SUM value of the programmed data transferred by NETIMPRESS when the Device Function "PROGRAM" is executed.

(2) FULL READ VERIFY: Data of the area where the Device Function "PROGRAM" is executed is read from the microcomputer and compared with programmed data transferred by NETIMPRESS when the Device Function "PROGRAM" is executed.

\*2: Blank Check Command: Blank check which is already set up with the Blank Check Mode [FUNC 86] is executed.

(1) PROGRAMMER BLANK CHECK: NETIMPRESS reads data in Flash memory of a microcomputer and checks whether the Flash memory area is blank.

(2) MICOM BLANK CHECK: NETIMPRESS sends BLANK CHECK command to a microcomputer, have the microcomputer do blank check and send the result to NETIMPRESS.

## **2.4 Baud Rate**

Supported baud rate by this Control Module are;  
9600/ 19200/ 38400/ 57600/ 76800/ 115200/ 460800/ 500000 bps.

### **2.4.1 Setup Range of Baud Rate**

A. In 1-wire serial mode, the baud rates you can select are;  
9600/ 19200/ 38400/ 57600/ 115200/ 500000 bps.

B. In UART mode, the baud rates you can select are;  
9600/ 19200/ 38400/ 57600/ 115200/ 460800 bps.

### **2.4.2 Baud Rate Setup Function**

With the Control Module FR805, use [FUNC 88] to set up baud rate. Note that the standard baud rate setup function [FUNC D2] of NETIMPRESS is not used with FR805.

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## 3 ID Code Protect Function

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### 3.1 Overview

The control module FR805 has the function to send an ID code to a microcomputer. A microcomputer that communicates with NETIMPRESS has the function to receive and read an ID code. By sending an ID code to a microcomputer, you can guard against illegal writing and reading of data.

Also, an ID code is sent to a microcomputer whenever the device functions are executed, and the microcomputer performs ID code checking.

### 3.2 Entering ID Code

The figure 4.1 shows the ID code processing flow of the flash microcomputer programmer NETIMPRESS. You can enter an ID code in the following two ways.

- (1) Enter an ID code by saving an ID file that has the extension “xxx.KEY”, in the DOS area of the control module in advance.

Please note that the ID file name with “.KEY” extension should be the same as the current file name (*i.e.*, the file name that is transferred to the Buffer RAM of NETIMPRESS).

- (2) Enter an ID code from the keyboard of NETIMPRESS.

You can use the ID Address Guidance function to enter an ID code from the keyboard by saving a master key file (YMxxR805.AMK) in the DOS area of the control module.

(A master key file is in the floppy disk provided with the control module. Also, the specific master key file for your microcomputer is provided.)

When you use NETIMPRESS as stand-alone, you can use both ID code entry methods.

When you use NETIMPRESS by remotely controlling from a personal computer, use the method (1) using an ID file.

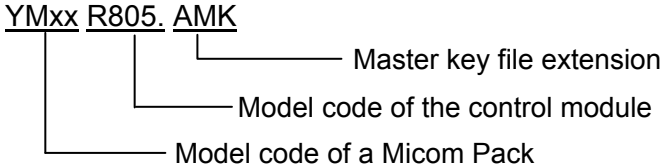
You can easily generate an ID file by using the file generator AZ481 that is available for an additional order.

The below table summarizes the entry methods of ID code.

ID Code Entry method	NETIMPRESS is remotely controlled from a PC.	AF200 is operating in the stand-alone mode
Enter ID code using an ID file.	○	○
Enter ID code from keyboard.	×	○

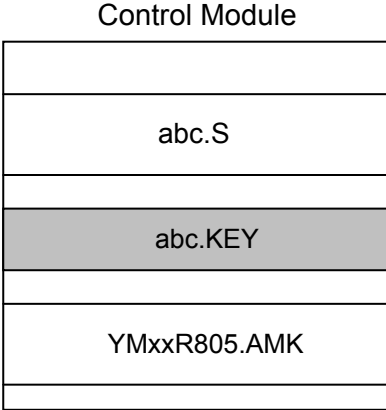
The master key file (YMxxR805.KEY) is placed in an appropriate Micom Pack, that you can download from our Web site.

A master key file name is formed as follows.

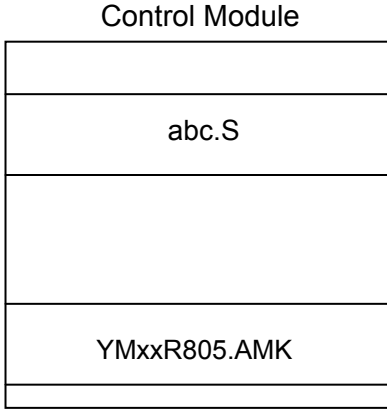


You can place multiple master key files in the control module.

To use the master key file, download an appropriate Micom Pack from our Web site and save the YMxxL816.AMK in the DOS area of the control module.

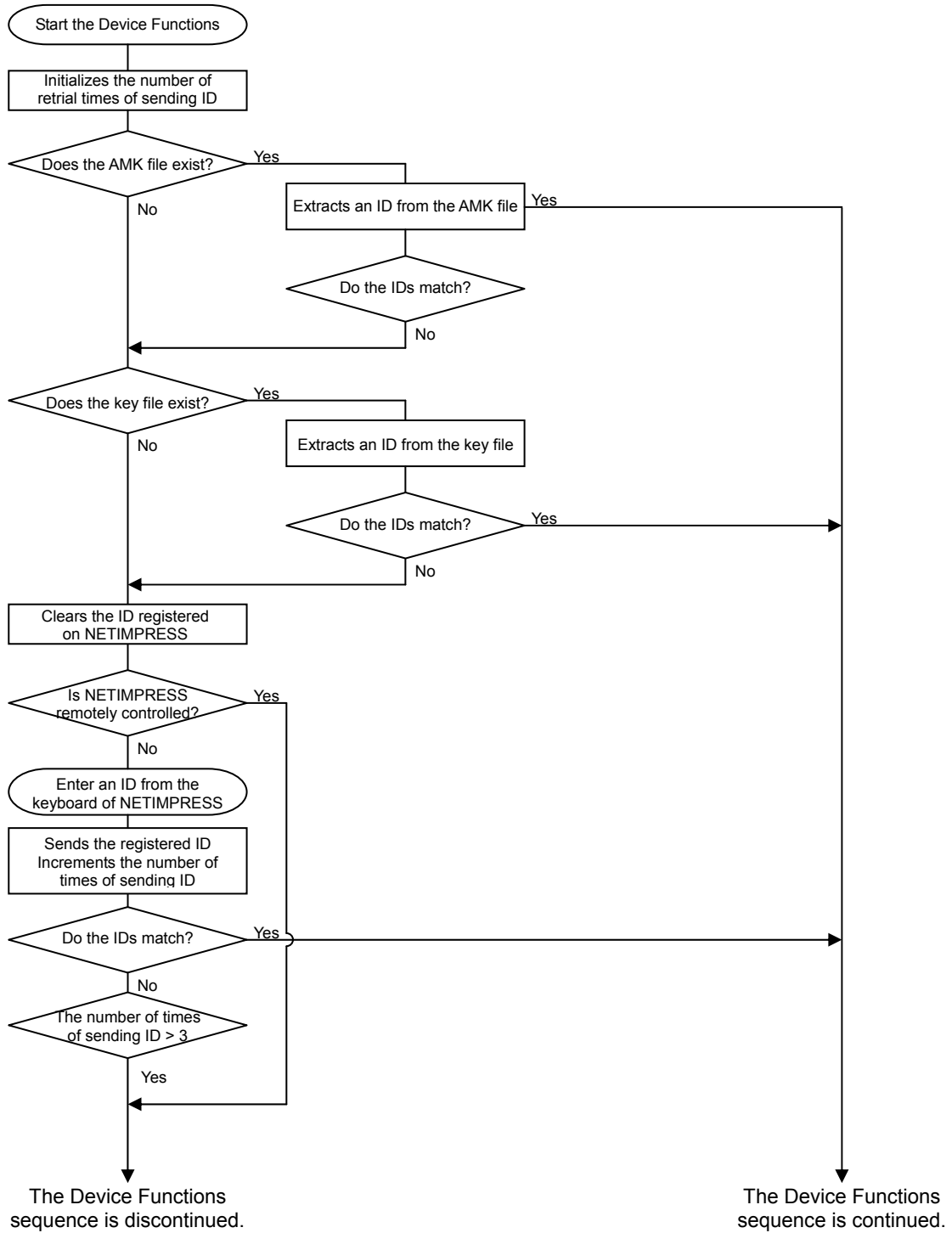


When a key file (abc.KEY) of the current object file (abc.S) exists in the control module, NETIMPRESS treats this abc.KEY file as an ID file and sends an ID code from this file to the microcomputer.



When no key file (abc.KEY) of the current object file (abc.S) exists in the control module, NETIMPRESS displays an ID code address as a guidance on the LCD using the master key file (YMxxR805.AMK).

**<ID CODE Process Flow>**



**Figure 3.2**

### 3.3 How to enter ID code from the Keyboard (Stand-Alone Mode)

When you enter an ID code from the keyboard of NETIMPRESS, place the master key file (YMxxR805.AMK) into the DOS area of the control module. If an ID file of the current object file does not exist in the DOS area of the control module, a key word address you should enter will be displayed on the LCD based on the key address information in the master key file.

#### <Steps to enter ID code>



- (1) When an ID file of the current object file does not exist in the DOS area of the control module, or when the ID file exists in the DOS area of the control module but an ID code does not match with an ID code in the microcomputer, address guidance information for an ID code you should enter will be displayed on the LCD of NETIMPRESS.

FR805
/ /COPY /
A=00000060 /D=FF

- (2) Input an ID data in the Data field ("D= ") and click the SET key of NETIMPRESS. When the SET key is pressed, NETIMPRESS displays the following ID code address on the LCD.

FR805
/ /COPY /
A=00000061 /D=FF

- (3) Enter an ID code of an appropriate size repeating the above step (2).  
When all ID codes are entered, ID code address on the LCD becomes blank.

When you need to change an ID code, use the   keys to check and change it. When you click the SET key after confirming the ID code you entered, the ID code entered using the 10-key is registered as the current ID code in NETIMPRESS and sent to the microcomputer.

This current ID code remains valid until you turn off NETIMPRESS, or another new current ID code is registered.

- (4) For the ID code sent to the microcomputer, when NETIMPRESS receives a response from the microcomputer telling that the ID code is illegal, NETIMPRESS starts again the password entry sequence from the beginning.

If NETIMPRESS receives three illegal ID code responses, it discontinues the device functions sequence.

### 3.4 ID File

When an ID file corresponding to an object to program is placed in the DOS area, you do not have to enter an ID from the keyboard of NETIMPRESS.

Also, when you perform programming with the Remote Controller (AZ490), you need an ID file as a must. Therefore, create an ID file and place it in the DOS area of the control module. Describe an ID file in the Motorola S format, while describing the top address of the ID area in the address section and ID data in the data section.

You can create an ID file using the Key File Generator (AZ481).

The following is an example to create an ID file.

R8C/3x series

```
S3060000FFDFFF1C
S3060000FFE3FF18
S3060000FFEBFF10
S3060000FFEFFF0C
S3060000FFF3FF08
S3060000FFF7FF04
S3060000FFFBFF00
S70500000000FA
```

*Note: The ID data section is described with "FF" in the above example.*



### 3.5 Processing ID Program

When you program the flash ROM with this control module FR805, you can select either to program an ID code or not to program an ID code that is to send out an ID code with "FF", so that you can prevent programming an ID code erroneously.

However, when you use the ID PROGRAM function, you need to place the YIA file with extension ".YIA" in the DOS area of the control module. If there is no YIA file placed in the DOS area of the control module, an error message "YIA FILE NOT FOUND" will be shown and the Device Function will be discontinued.

A YIA file specific to your microcomputer is contained in the Micom Pack, which you can download from our Web site.

To set up an ID code programming mode with NETIMPRESS, do as follows.

(1) Press    keys.

(2) Use the Down Arrow or Up Arrow key   to choose the ID PROGRAM ON or OFF.

(3) Press    keys to fix the selection.

#### NOTE:

When you use the ID Program by setting to "OFF", keep in mind that a SUM value of a programming object differs from the one at a time of writing.

## 4 Connecting to the Target System and Connector

### 4.1 Signal List

<1 wire serial mode>

Microcomputer	NETIMPRESS Standard Signal				Microcomputer
VSS	GND	15	1	GND	VSS
	TVpp1	16	2	TVccd	VCC
	TVpp2	17	3	Vcc	
Watchdog pulse	WDT	(18)	(4)	TRES	Positive /TRES
	TAUX3 TVpp1C	19	5	/TRES	/RESET
	TAUX4 TVpp2C	20	6	TCK	
	Reserved	21	7	Reserved	
	Reserved	22	8	Reserved	
	TAUX	23	9	TAUX2 (TRW)	
	TBUSY	24	(10)	/TICS	Multiplexer
	TIO	25	11	TAUX5 (/TOE)	
	TVccs	26	12	TMODE	
	TRXD	27	13	TTXD	MODE
VSS	GND	28	14	GND	VSS

#### Target Probe Signal List (R8C/3x series)

- Be sure to connect the signals marked with “○” to the target system.
- For the signals in parentheses, connect them only when necessary.
- For the signals not marked with “○” or not in parentheses, be sure not to connect them to a circuit of the target system.

**<UART mode>**

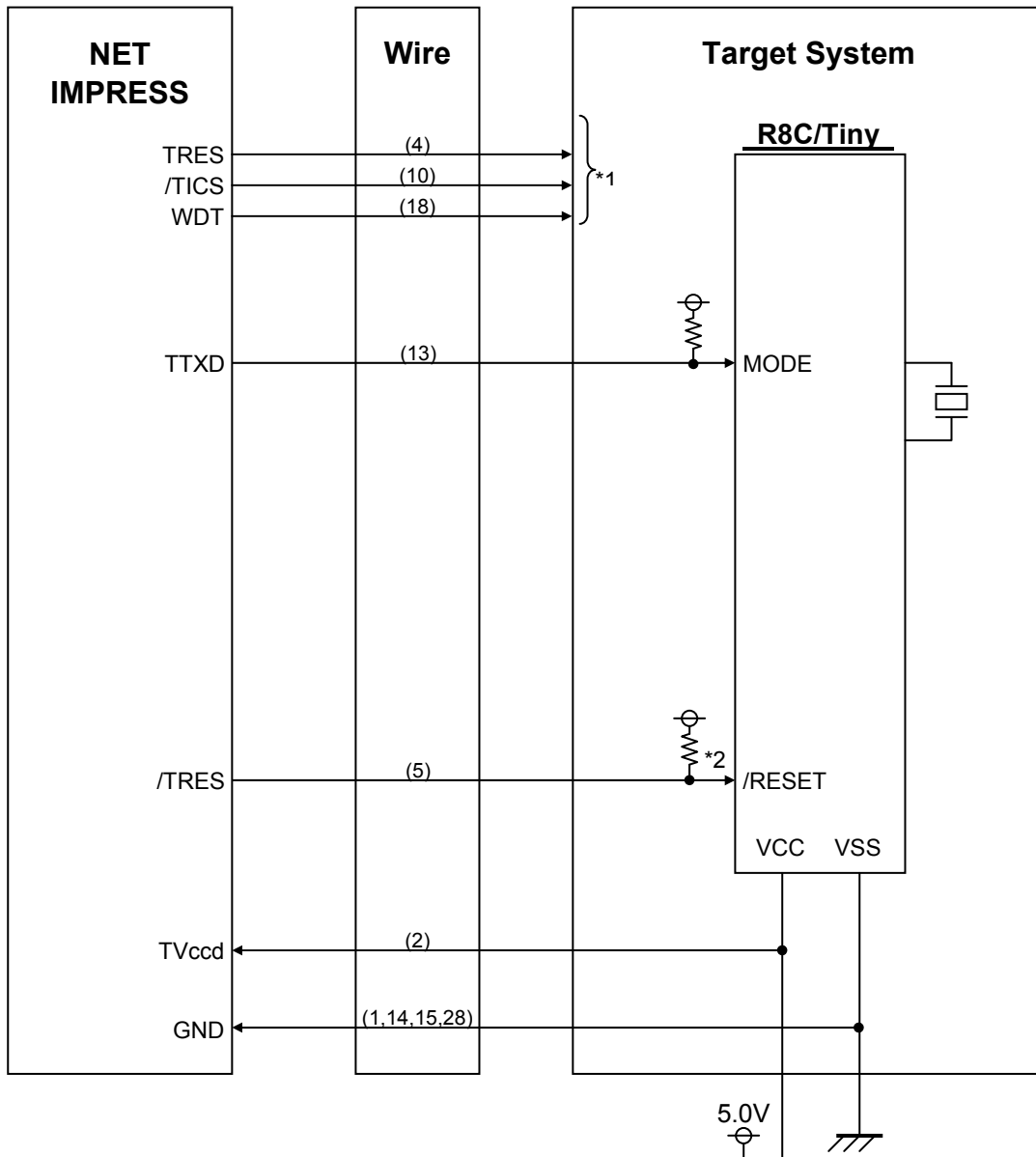
Microcomputer	NETIMPRESS Standard Signal				Microcomputer
VSS	GND	15	1	GND	VSS
	TVpp1	16	2	TVccd	VCC
	TVpp2	17	3	Vcc	
Watchdog pulse	WDT	(18)	(4)	TRES	Positive /TRES
	TAUX3 TVpp1C	19	5	/TRES	/RESET
	TAUX4 TVpp2C	20	6	TCK	
	Reserved	21	7	Reserved	
	Reserved	22	8	Reserved	
	TAUX	23	9	TAUX2 (TRW)	
	TBUSY	24	(10)	/TICS	Multiplexer
	TIO	25	11	TAUX5 /TOE	
	TVccs	26	(12)	TMODE	MODE
TXD0	TRXD	27	13	TTXD	RXD0
VSS	GND	28	14	GND	VSS

**Target Probe Signal List (R8C/3x series)**

- Be sure to connect the signals marked with “○” to the target system.
- For the signals in parentheses, connect them only when necessary.
- For the signals not marked with “○” or not in parentheses, be sure not to connect them to a circuit of the target system.

## 4.2 Model Connection to Target System

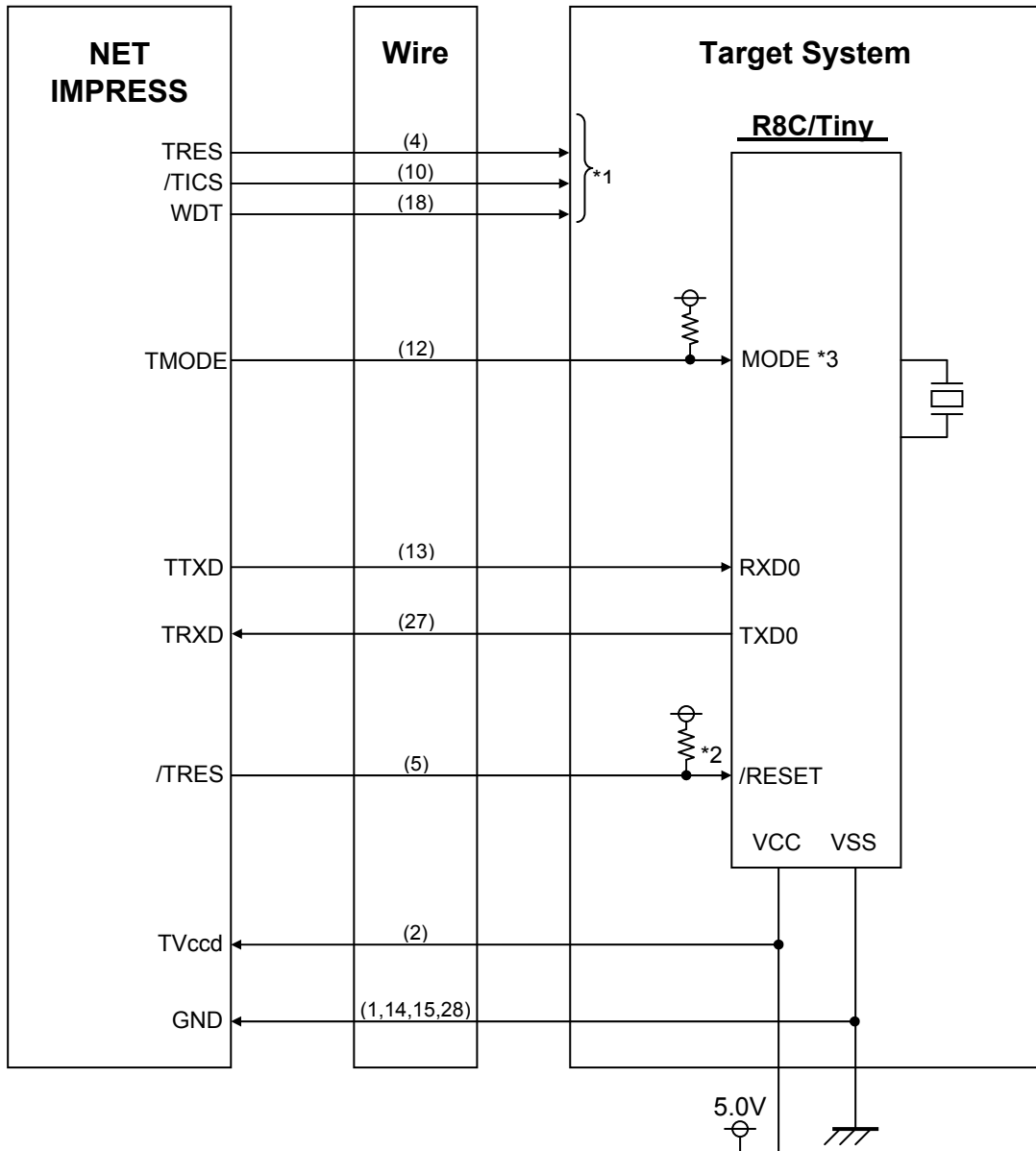
<1 wire serial mode>



\*1: Optional

\*2: Be sure to keep the reset signal not to be delayed.

<UART mode>



\*1: Optional

\*2: Be sure to keep the reset signal not to be delayed.

\*3: This signal is not required to be connected when it is set up to the specified logic values on a target system.

The table below lists how to set up the MODE signal.

Signal Name	Value
MODE	Vss

(1) For the signals defined as shared terminals, multiplexing circuit of these signals must be provided to the user system.

/TICS signal is asserted only when NETIMPRESS is performing the Device Functions.

/TICS signal multiplexes the signals connected to these shared terminals.

Multiplexing circuits are not required for a target system where these signals for write control are defined as the control signals for the flash microcomputer.

Inserting the multiplexing circuit into the user system can produce the same conditions with a state where NETIMPRESS is not connected (i.e., the connector is unplugged) while /TICS signal is being negated (when the Device Functions are not executed).

(2) WDT Signal:

The clock signal defined with the WDT Clock Period [FUNC D 5] is constantly output from WDT signal terminal by NETIMPRESS. (Open collector output)

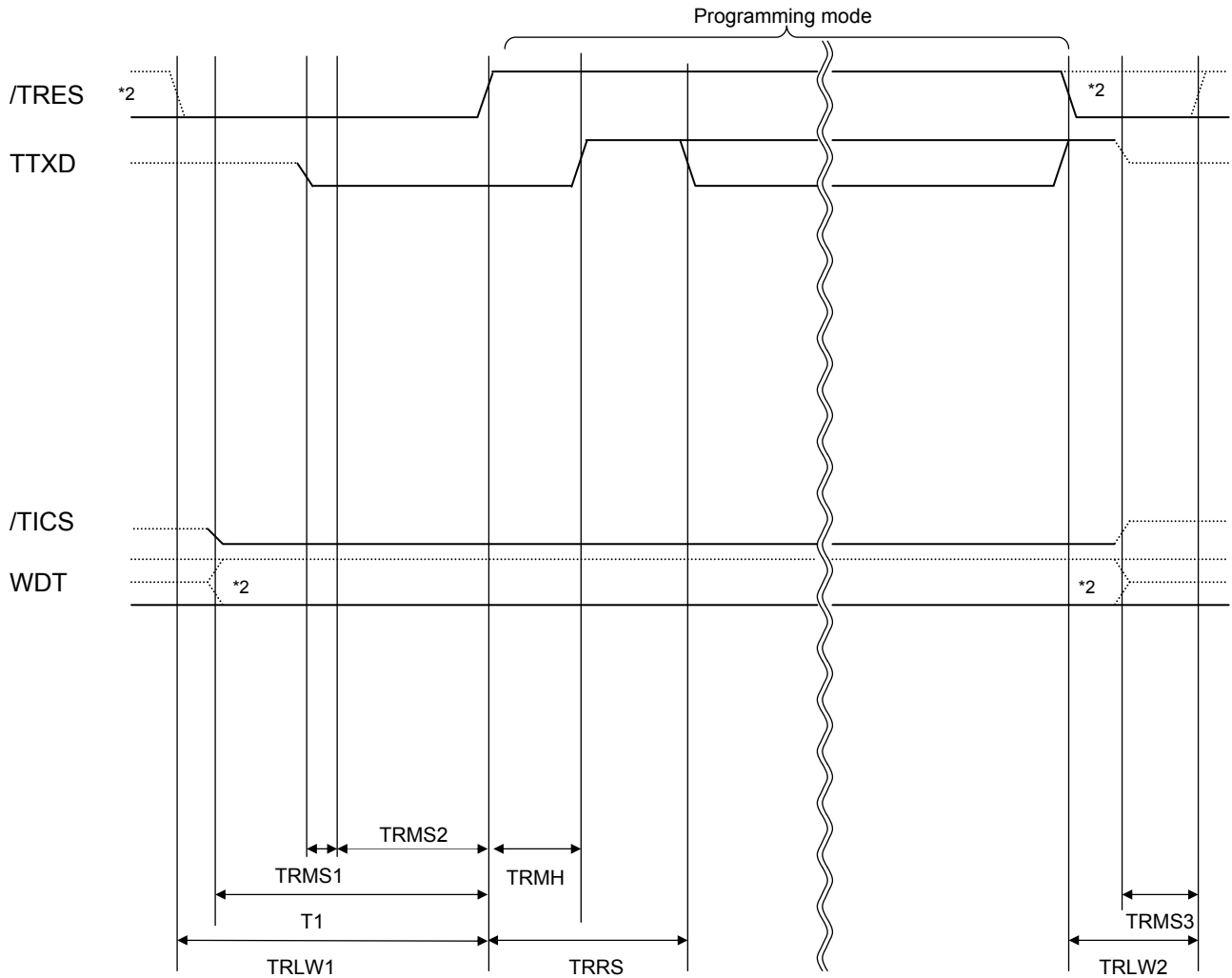
Connect this signal to the user circuit that requires the appropriate clock signal when programming the flash memory.

(3) TRES Signal:

NETIMPRESS is provided with /TRES signal in the standard probe, which is an open collector type output so that it can make wired-or connection in the target system and be connected to /RESET signal of your microcomputer using the user circuit. /TRES signal can be used when the target system requires a reset signal of positive logic. TRES signal is a totem pole output signal.

### 4.3 Waveform of Control Signal

<1 wire serial mode>

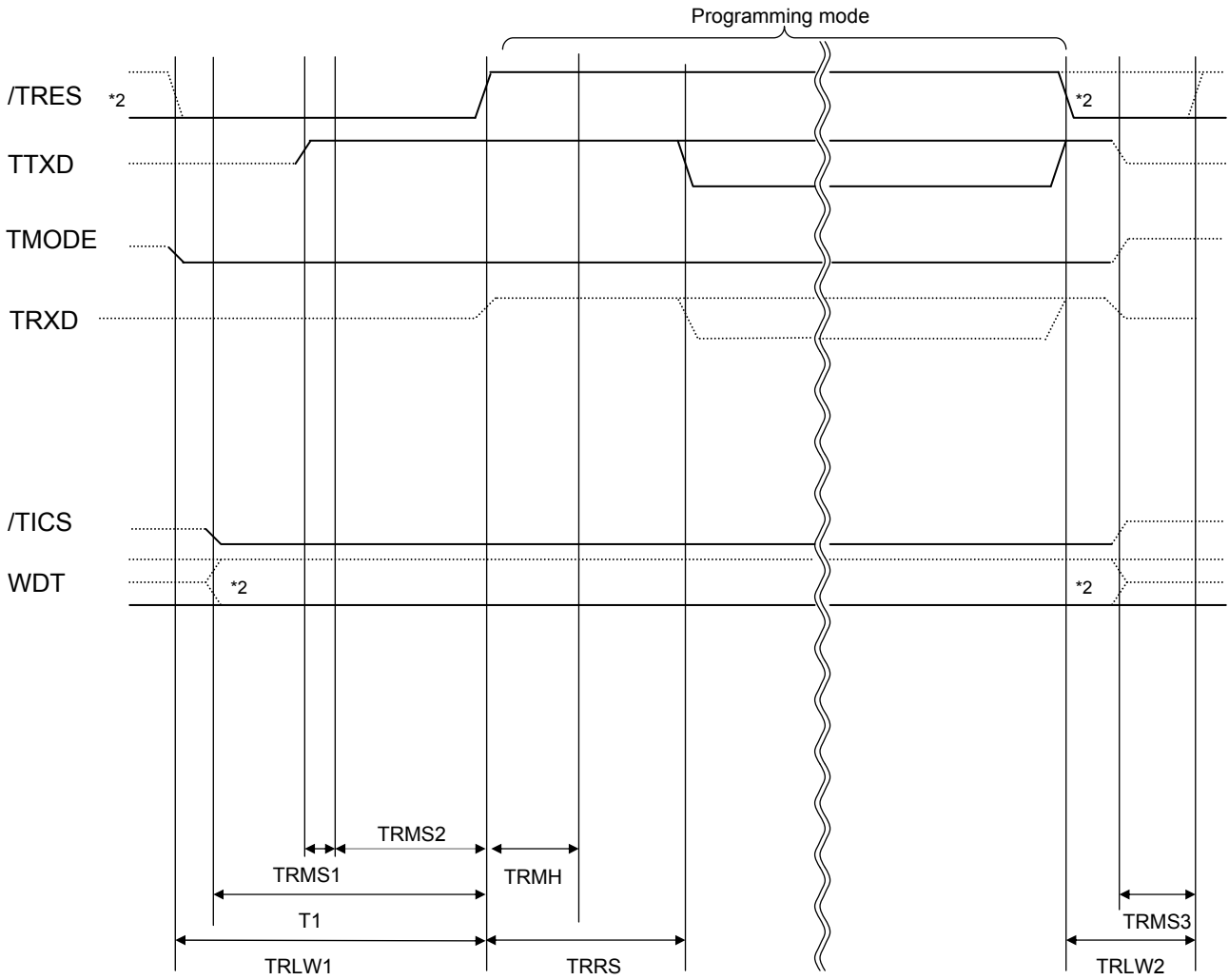


	MCU Specifications	NETIMPRESS Specification
TRLW1		300 ms (min.)
TRLW2		100 ms (min.)
TRMS1		10 ms (min.)
TRMS2		200 ms (min.)
TRMS3		50 ms (min.)
TRMH	100 ms (max.)	100 ms (max.)
TRRS	200 ms (min.)	300 ms (min.)
T1		290 ms (min.)

\*1: The dotted line "-----" indicates hi-Z state.

\*2: Optional function

<UART mode>



	MCU Specifications	NETIMPRESS Specification
TRLW1		300 ms (min.)
TRLW2		100 ms (min.)
TRMS1		10 ms (min.)
TRMS2		200 ms (min.)
TRMS3		50 ms (min.)
TRMH	100 ms (max.)	100 ms (max.)
TRRS	200 ms (min.)	300 ms (min.)
T1		290 ms (min.)

\*1: The dotted line " - - - - - " indicates hi-Z state.

\*2: Optional function



- (1) Turn on power of NETIMPRESS first and then the target system. Then, NETIMPRESS asserts /TRES right after its power is turned on. Also, it starts outputting periodic pulse of the WDT signal.
- (2) /TICS signal is asserted by execution of the program command, and communication channel for programming is connected to NETIMPRESS on the target system. (Multiplexing with this /TICS signal is not required for a system where communication channel and related signals for programming are exclusively used by NETIMPRESS, independently from other user circuit.).
- (3) The programming mode, upon being executed, starts communicating with NETIMPRESS using a specified communication circuit.
- (4) When programming completes, NETIMPRESS automatically completes applying TVpp.
- (5) NETIMPRESS also negates /TICS signal.
- (6) NETIMPRESS continues asserting a reset signal even while the device functions are not executed. Also, it continues generating periodic pulse of WDT signal.

## 4.4 Probe

As the standard probes, four types of the probe (AZ410, AZ411, AZ412 and AZ413) are available for an additional order. Please contact us or your local distributor for ordering the probe.

For the connection diagram of each probe, see the MegaNETIMPRESS/C"arNETIMPRESS Instruction Manual, Section 8. 5. "Target Interface".

### AZ411/AZ413

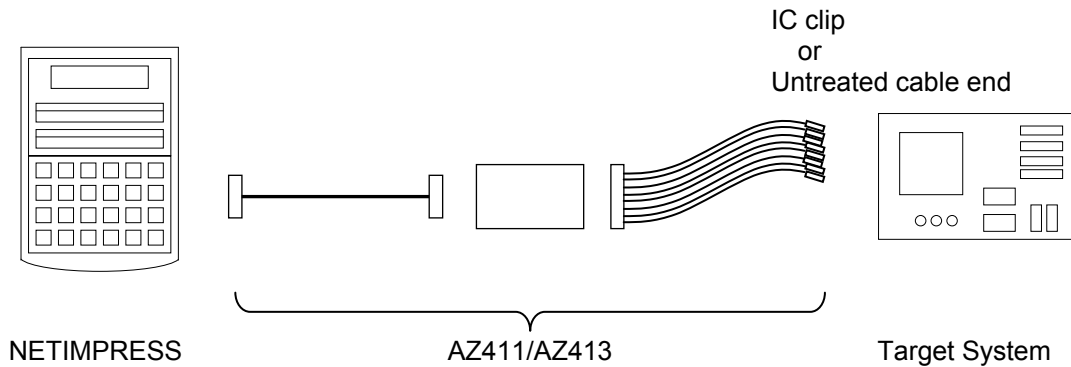
Most of I/O lines of NETIMPRESS have 1M $\Omega$  pull-down resistors between the GND line and signal lines.

Also, control lines from NETIMPRESS that are used on the target system must be kept negated not to disturb the target system when connectors for NETIMPRESS are removed.

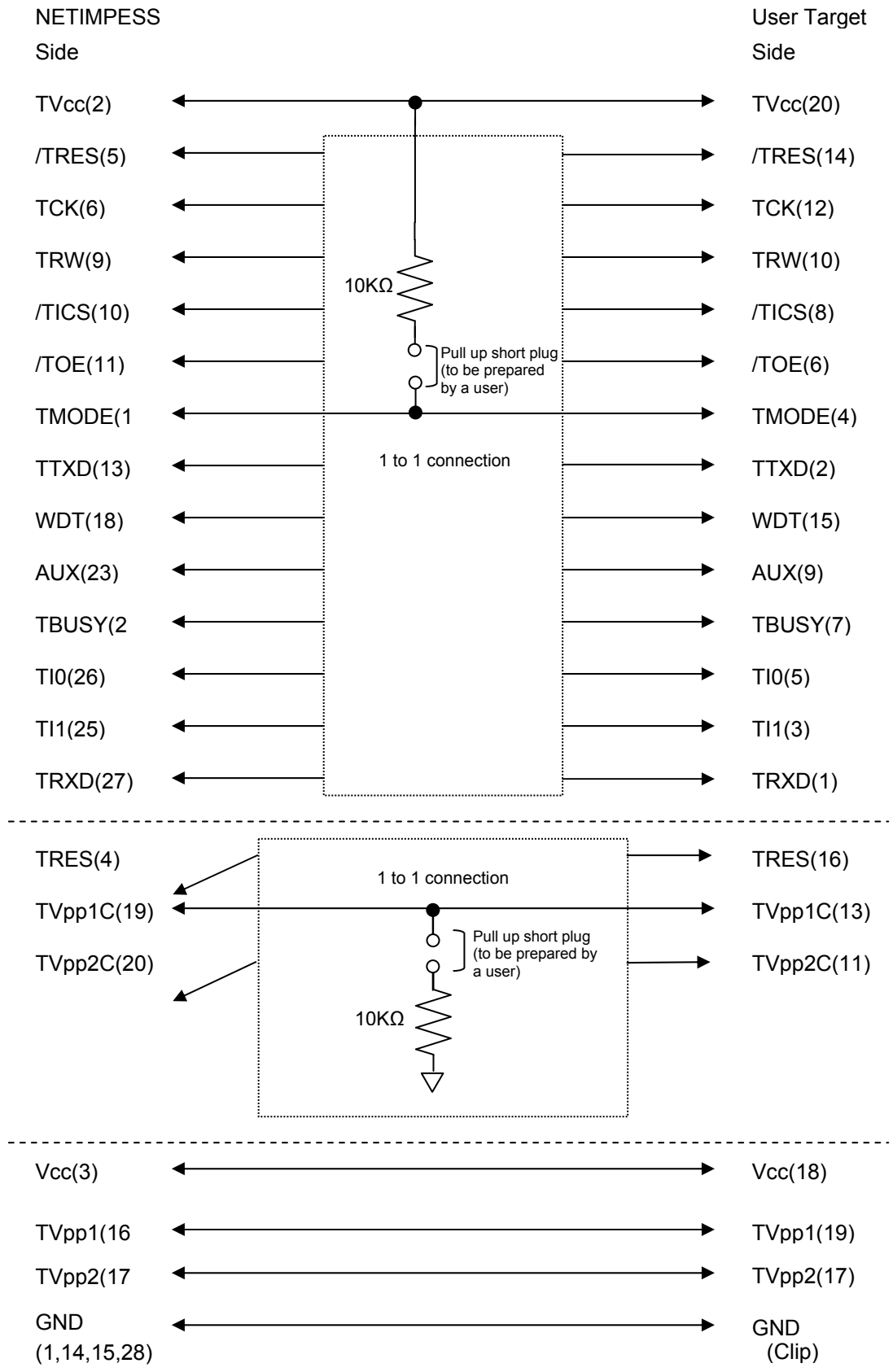
It is recommended to either pull up the power or pull down the GND signal for these control lines with about 10K $\Omega$  resistors on the user system.

In case the pull-up resistor of about 10K $\Omega$  cannot be added to the control signals within the user system, use AZ411/AZ413.

AZ411/AZ413 enables you to optionally add pull-up/pull-down resistors to the control lines running from NETIMPRESS.



# AZ411/AZ413



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## 5 Adapting to Derivative Microcomputers – Modifying Parameters

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### 5.1 Minor Parameter Modification through the Keyboard of NETIMPRESS

For the parameters that are defined by the function commands (FUNCTION D1 to FUNCTION DF) as described in the Section 5.4 “Parameters Settings” of the MegaNETIMPRESS/C”arNETIMPRESS Instruction Manual, you can modify them through the keyboard of NETIMPRESS. Parameters for communication interface with the target system, voltage of the target system, etc., for example, are the ones you can modify through the keyboard of NETIMPRESS.

**Note:**

You cannot modify wide-ranging parameters and settings of the target microcomputer such as ROM block configuration of flash ROM address (FUNCTION D6) through the keyboard of NETIMPRESS. For modifying them, it is recommended to use the remote controller AZ490 that is available for an additional order.

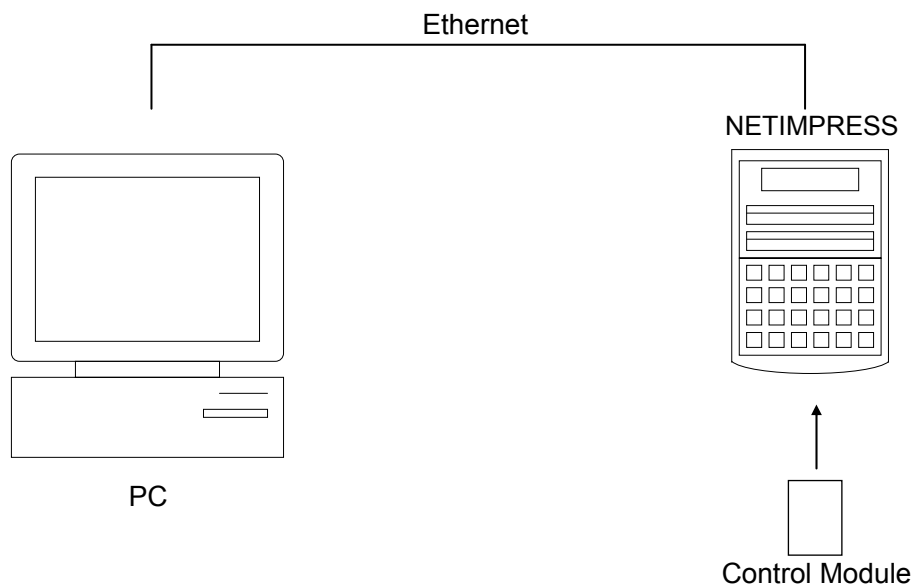
Also, the parameter list of actual microcomputers is available at our Web site. For details, contact your local distributor or us.

### 5.2 Modifying Parameters for Target Microcomputer using the Remote Controller

The remote controller software AZ490 for controlling NETIMPRESS remotely from a PC is available for an additional order. This remote controller has the function to set up and confirm parameters besides the remote control capability. With the remote controller, you can set up and modify parameters including the following.

- |                              |  |
|------------------------------|--|
| (1) MCU Type:                | Name of a target microcomputer<br>The name of a microcomputer displayed on the LCD of NETIMPRESS can be customized.  |
| (2) Flash ROM Area:          | Flash memory area of a target microcomputer  |
| (3) ROM Block:               | Flash memory block alignment can be set up with address and size for each ROM group, enabling you to use the Control Module with derivative microcomputers.  |
| (4) MCU Clock:               | MCU clock frequency can be setup.  |
| (5) Communication Interface: | A communication interface with a target system can be setup.   |
| (6) Other:                   | Microcomputer-specific information defined by the Control Module (i.e., parameters specified by pressing <input type="text" value="FUNC"/> → <input type="text" value="8"/> → <input type="text" value="X"/> ) |

### 5.3 How to Modify Parameters Using Remote Controller Software (AZ490)



Connect a PC and NETIMPRESS using Ethernet cable (10BASE-T) cable.

Insert the Control Module supporting the target microcomputer into NETIMPRESS' card slot.

By running the Remote Controller on a PC, you can modify or check parameter tables of the Control Module inserted in NETIMPRESS.

With the Remote Controller AZ490, you can load and save parameters all at once. By saving parameter information generated with the Remote Controller in a PC, you can easily modify parameter tables for various derivative microcomputers of the same family.

Also, using this function, you can easily load the Micom Pack, which you download from our Web site, into the Control Module.

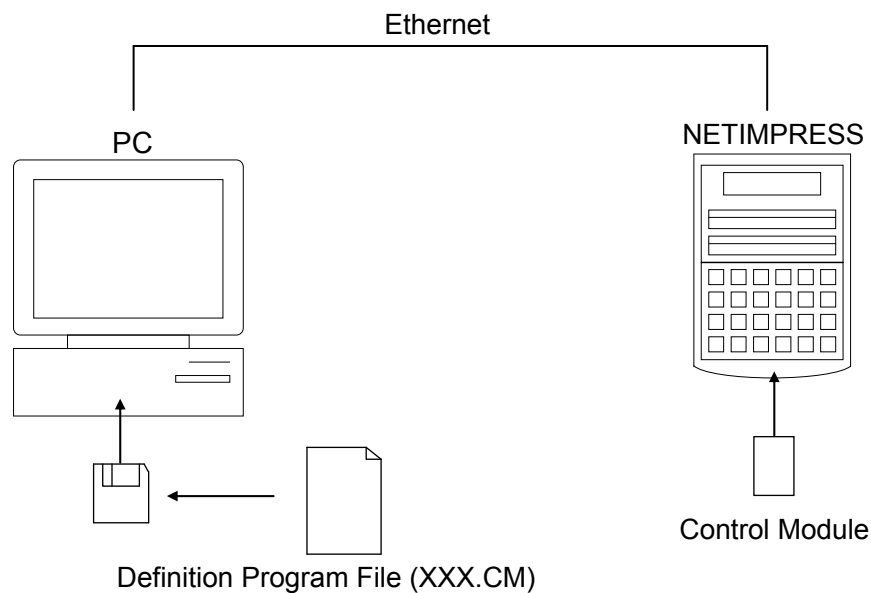
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## 6 Replacing Definition Program

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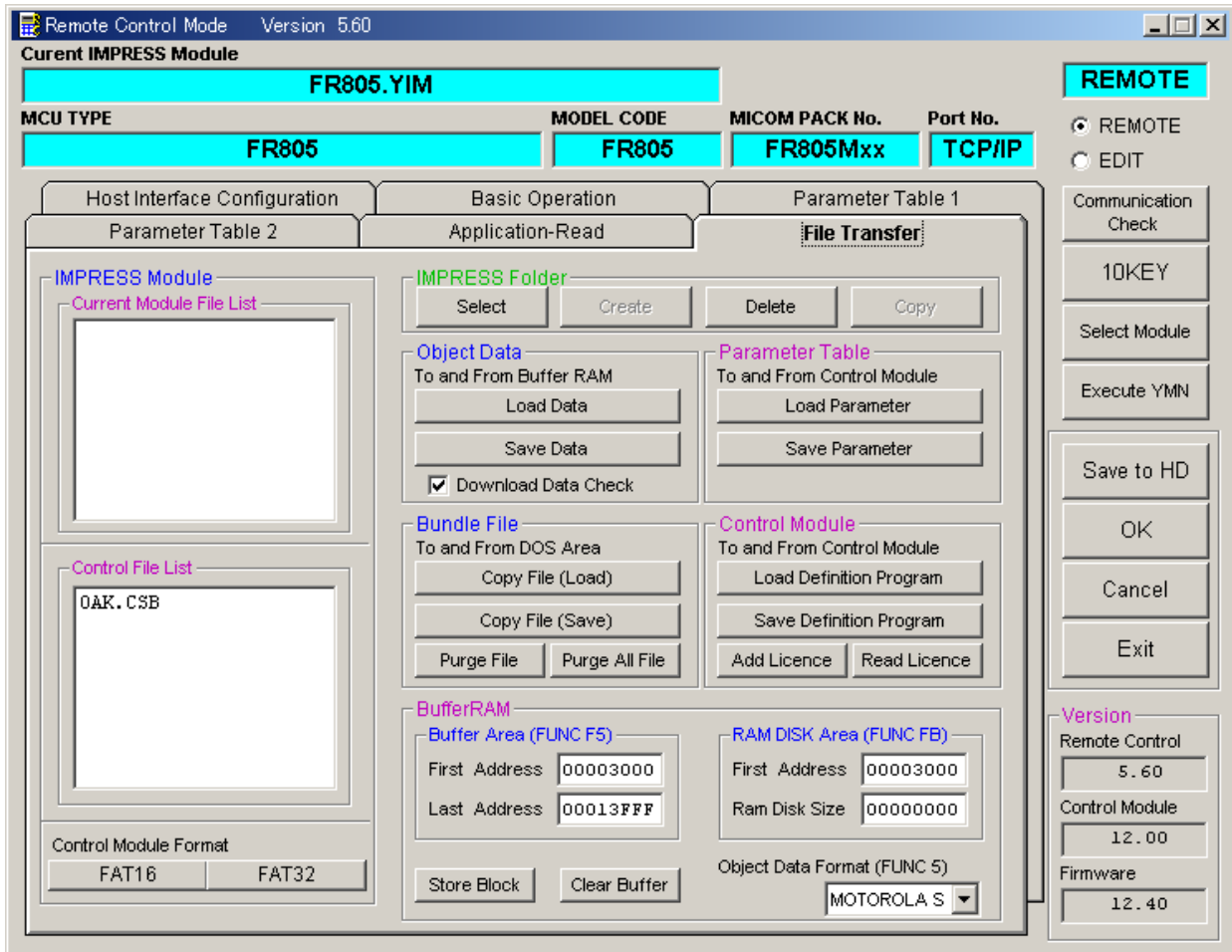
### 6.1 Overview

The Control Module has the function to support programming microcomputers that have different programming specifications from those of the target microcomputer. You can quickly replace the definition program using the definition program download function of the Remote Controller AZ490, instead of changing the Control Module. With this definition program replacement function, you can replace with other Control Module to program microcomputers of different programming specifications by adding the definition program license to the Control Module. The definition program license is available for your additional order. For any questions, contact your local distributor or us.



## 6.2 How to Replace Definition Program

By setting the Control Module added with a definition program license into NETIMPRESS, you can replace the definition program of the Control Module using the definition program download function of the Remote Controller AZ490 (Control Module Load Definition Program button on the File Transfer tab). (Note that you cannot use this function if you are using NETIMPRESS as stand-alone.) When you purchase the definition program license, download the definition program file (“xxx.CM”), which is in the floppy disk provided with the definition program license, into the Control Module.



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## 7 Power Supply Voltage Status Command

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### 7.1 Overview

With this setting, programming time within limited voltage range (4.5 V to 5.25 V) can be shortened.

**Be sure NOT to program at the voltage out of the limited range when using this setting.**

For details, consult our technical support centre.

### 7.2 How to Setup



Select the setting by above key operation.

“NORMAL” is to program in normal setting. (Default)

“HIGH SPEED” is to program in the limited voltage range to shorten the programming time.

After selecting the setting, operate keys below to save the setting.





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## 8 Notes and Cautions for Using Control Module

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- (1) The Control Module FR805 is built for NETIMPRESS. *DO NOT* use this Control Module for any flash microcomputer programmers other than the NETIMPRESS series.
- (2) The Control Module FR805 is designed for the specific microcomputer. Do not use this Control Module for programming microcomputers other than the specified microcomputer. Using this Control Module for microcomputers other than the specified microcomputer would damage your target system.
- (3) NETIMPRESS consumes power of several mA from Tvccd terminal to drive the interface IC with the target system (IC inside NETIMPRESS).
- (4) *Be sure NOT to* initialize (format) the Control Module (Compact Flash Card). The Control Module contains the definition program (the control program), besides the DOS area where you can save your files. Initializing the Control Module results in destroying this control program.
- (5) *DO NOT insert or remove* the Control Module while the Device Functions or the Function key operation is being executed. Be sure not to insert or remove the Control Module from the flash microcomputer programmer while accessing it.
- (6) Use NETIMPRESS with the Control Module inserted into it.