Micom Pack
Instruction Manual

Micom Pack for Control Module
for
Flash Microcomputer Programmer
(NETIMPRESS)

FN820M32

Target Microcomputer: μPD70F3423 (V850ES/DJ3)
μPD70F3424 (V850ES/DJ3)

Yokogawa Digital Computer Corporation

FN820M32 (µPD70F3423/µPD70F3424)

Revision History

Edition	Date of issue	Description
First Edition	November 22, 2007	Initial publication

Contents

1   Overview

FN820M32 is the Micom Pack for the Control Module FN820 supporting the flash microcomputer programmer NETIMPRESS, and contains a parameter file supporting the NEC Electronics' µPD70F3423/µPD70F3424.

For a Micom Pack for other microcomputers, contact us or your local distributor.

The Control Module supported by this Micom Pack FN820M32 is FN820.

CAUTION:
The Micom Pack FN820M32 is built for the specific Control Module FN820. Do not use this Micom Pack with any Control Modules other than the specified Control Module.

The handling instructions are described in the Micom Pack Instruction Manual and be sure to read this Instruction Manual carefully before you start operation.

To use the Micom Pack, you need the Remote Controller AZ490 that is available for an additional order.

For how to download the Micom Pack to the Control Module, see Chapter 4 "Downloading Micom Pack" of this Instruction Manual.

Check once again if combination of the Micom Pack and the Control Module is correct. Also, check if you have a correct microcomputer, memory size, power supply, etc. Incorrect parameter values would lead to serious damage to your microcomputer and target system.

For any questions or unclear points, please contact us by emailing to info-impress@yokogawa-digital.com.

2　Specifications

2.1　Target Microcomputer and Specifications

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

Model Name	Target Microcomputer	FN820M32
Target Microcomputer　*1	µPD70F3358	µPD70F3423 µPD70F3424
Flash Memory Capacity	1-MB	512-KB
Flash Memory Address	#000000 to #0FFFFF	#000000 to #07FFFF
Programming Voltage (Vpp)	Not applied.	Not applied.
Default	—	—
Object File Format	Motorola S, Binary, Intel HEX	Motorola S, Binary, Intel HEX
Default	Intel HEX	Intel HEX
Target Interface	UART (Asynchronous communication) Interface 9600 / 10400 /19200 / 31250 / 38400 / 62500 /76800bps □ MSB first　　　　　■ LSB first	
	CSI (Synchronous communication) Interface/HS-CSI (Handshake synchronous communication) Interface 62.5K/125K/250K/500K/850K/1.25M/2.5M (bps) ■ MSB first　　　　　□ LSB first	
Data transfer format between Flash Microcomputer Programmer and Target System	Binary	Binary
Memory status when erased	#FF	#FF
MCU Clock during programming	Operation clock: 　5.0MHz to 32.0MHz Input clock: 　2.5MHz to 10.0MHz	Operation clock: 3.2MHz Input clock: 4.0MHz
Target interface voltage	3.0V to 3.6V	3.5V to 5.25V

*1: It is collectively described as µPD70F3423 in this manual.

2.2 Setting for Serial Communication

Set up communication between NETIMPRESS and a target microcomputer. For the FN820M32, set up as follows:

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

Select either UART (asynchronous communication) or CSI (synchronous communication). When using HS-CSI, choose CSI (synchronous communication) too.

For setting up a communication channel with NETIMPRESS, see the MegaNETIMPRESS Instruction Manual, Section 5. 5. 2. "Communication Channel Setting".

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

Set up "0" when making UART communication.

Set up "0" when making CSI communication.

Set up "2" when making CSI-HS communication.

For setup conditions, see the Instruction Manual of the Micom Pack you are using. For setting up communication channels with NETIMPRESS, see the MegaNETIMPRESS Instruction Manual, Section 5. 5. 9. "Set Communication Channel".

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

Set up communication speed for UART communication by choosing from 9600, 19200, 31250, 38400, 62500 and 76800bps. For how to set up the UART communication speed with NETIMPRESS, see the MegaNETIMPRESS Instruction Manual, Section 5. 5. 3. "UART Baud Rate Setting".

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

Set up a communication speed for CSI communication (HS-CSI) by choosing from 62.5Kbps, 125Kbps, 250Kbps, 500Kbps, 850Kbps, 1.25Mbps and 2.5Mbps. For how to set up the CSI communication speed with NETIMPRESS, see the MegaNETIMPRESS Instruction Manual, Section 5. 5. 4. "Set CSI Baud Rate".

3 Connecting to the Target System and Connector

3.1 Signal List

The below table lists signal example at the side of the target probe connector when using the Micom Pack FN820M32.

| CPU Signal	NETIMPRESS Standard Signal				CPU Signal
Bvss	GND	15	1	GND	BVss
	TVpp1	16	2	TVccd	BVdd
	TVpp2	17	3	Vcc	
Watchdog pulse signal	WDT	(18)	(4)	TRES	Positive /TRES
	TAUX3	19	5	/TRES	/RESET
FLMD0	TAUX4	20	6	TCK	SCKB0 *1*2
	Reserved	21	7	Reserved	
	Reserved	22	8	Reserved	
	TAUX	23	9	TAUX2	
P84 *2*3	TBUSY	24	(10)	/TICS	for Multiplexer
	TI0	25	11	/TOE	
	TI1	26	(12)	TMODE	
SOB0/TXDA0 *1	TRXD	27	13	TTXD	SIB0/RXDA0 *1
Bvss	GND	28	14	GND	BVss

- Be sure to connect all the signals marked with " ◯ " to a target system.

- The signals in parentheses are to be connected when necessary.

- Since the signals not marked with " ◯ " or those not in parentheses are being controlled, be sure not to connect them to a circuit of a target system.

*1: UART: TXDA0, RXDA0
   CSI, CSI-HS: SCKB0, SOB0, SIB0

*2: Not required to be connected when using with UART.

*3: Not required to be connected when using with UART or CSI (without HS)

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3.2　Model Connection to a Target System
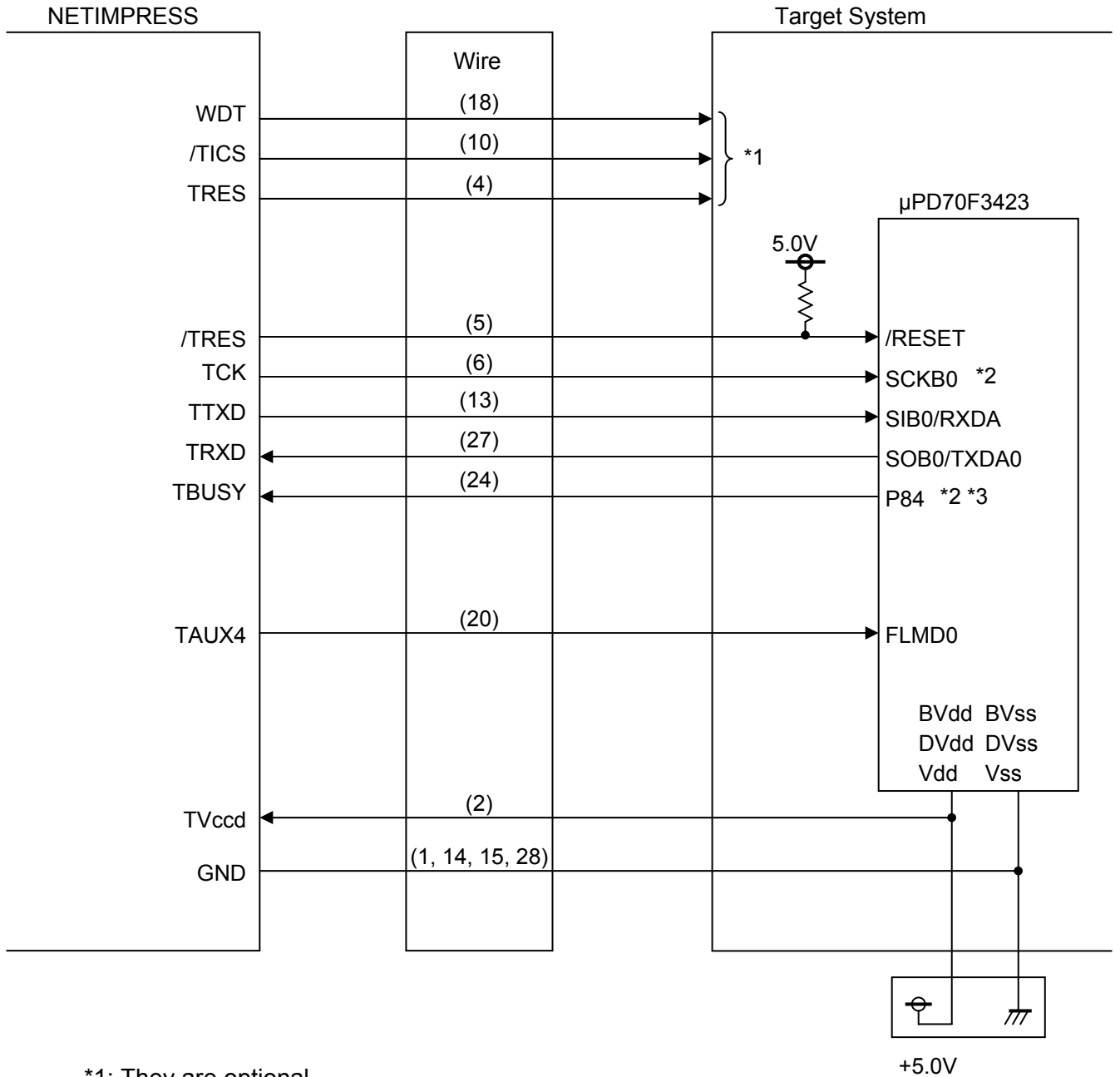
*1: They are optional.

*2: Not required to be connected when using with UART.

*3: Not required to be connected when using with UART or CSI (without handshake).

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

/TICS signal is asserted only when NETIMPRESS is executing 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 a 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 generated from WDT signal terminal by NETIMPRESS.

Connect this signal to a 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 a target system and be connected to /RESET termial of your microcomputer using a user circuit.   TRES signal can be used when a target system requires a reset signal of positive logic. TRES signal is a totem pole output signal.

3.3   Waveform of Control Signal
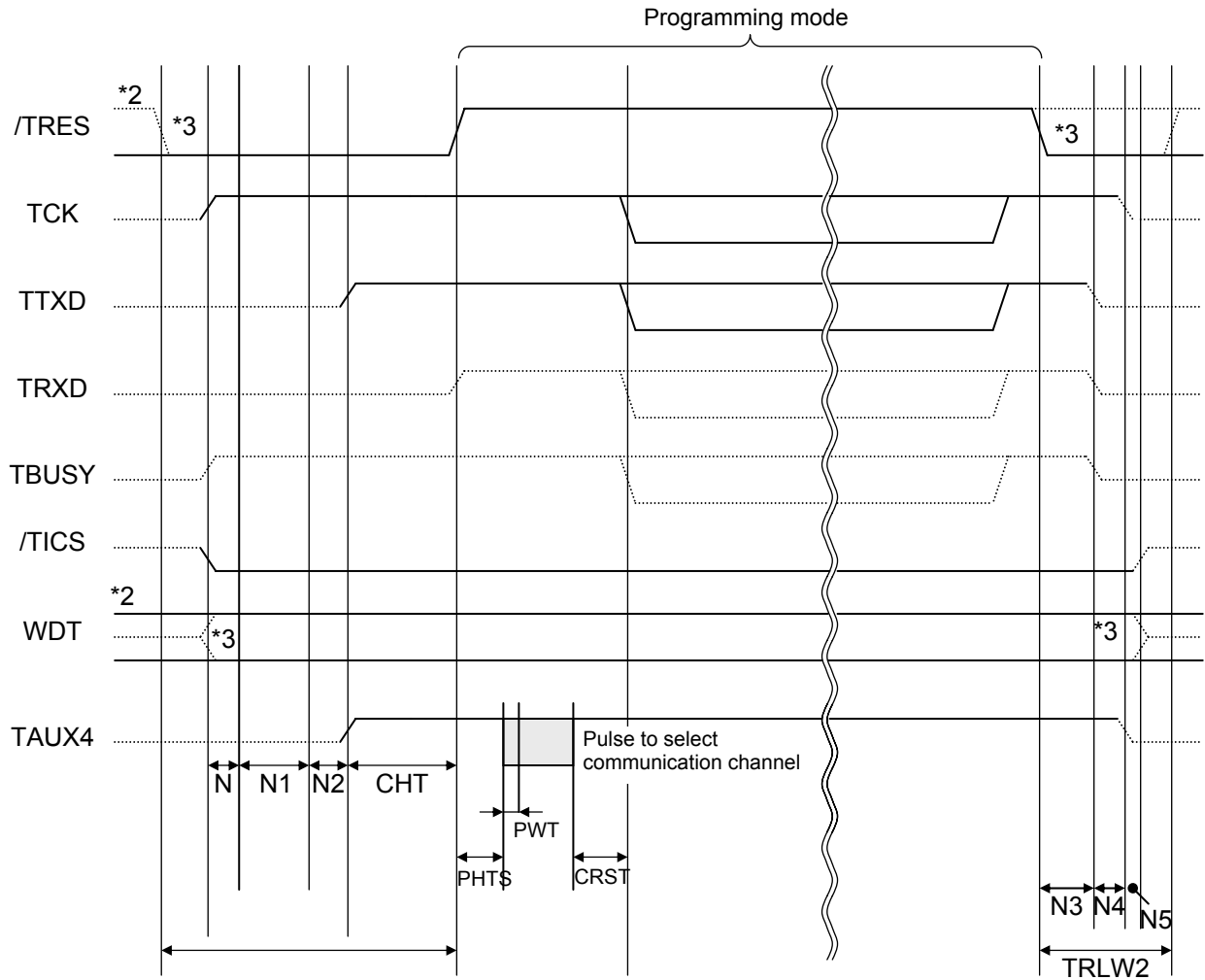
	NETIMPRESS Specification
TRLW1	300ms (Minimum)
TRLW2	150ms (Minimum)
N	10ms (Minimum)
N1	100ms (Minimum)
N2	100ms (Minimum)
N3	60ms (Minimum)
N4	50ms (Minimum)
N5	10ms (Minimum)

	Parameter	Max.	Min.	Meaning
CHT	INI<PM2>	—	2ms	Reset timing
PHTS	INI <PM3>	—	4ms	Pulse timing
PWT	INI <PM4>	—	50μs	Pulse width
CRST	INI <PM5>	—	50ms	Communication start timing

*For PHTS, operation frequency is calculated with 4.0MHz.

*1:   The dotted line " ⋯⋯⋯⋯⋯⋯⋯ " indicates HIZ state.

*2:   /TRES and WDT are the open collector output signals.

*3:   These are optional.

(1) Power on NETIMPRESS first and the target system next.

(2) NETIMPRESS asserts a reset signal to pull the target microcomputer into the programming mode.

(3) /TICS is asserted by execution of the program command, and communication channel for flash programming is connected to NETIMPRESS on a target system. (Multiplexing with this /TICS signal is not required for a system where communication channel and related signals for flash programming are exclusively used by NETIMPRESS, independently from other user circuit.)

(4) NETIMPRESS raises TVpp to a specified voltage.

(5) The programming mode is started and communication with NETIMPRESS is started using a specified communication circuit. Communication is performed in conditions set up in advance.

(6) When programming completes, NETIMPRESS automatically completes applying TVpp.

(7) NETIMPRESS negates /TICS too. (While /TICS is asserted, WDT signal (output) continues to generate periodic pulse signal).

4   Downloading Micom Pack

4.1   File Configuration

The table below lists the files required to use this Micom Pack.

(1) Files provided by us

File Name	Description
V1202N820.CM *1	The definition program file (With this Micom Pack FN820M32, the definition program file is not provided.)
V1200M32N820.PRM	The parameter table file containing device information of µPD70F3423.
YM32N820.YDD	The file to set up security. Normally, place this file in the YIM folder.

*1: The version of the latest definition program may differ from the version information described in this section. The figures after the initial letter "V" indicate a version of the definition program, which may be upgraded without a notice. For details, contact your local distributor or us.

(2) Files to be prepared by a user

File Name	Description
Object.xxx	An object file to program flash memory
Object.YSM	A file to detect invalid changes to buffer RAM. For details, see the MegaNETIMPRESS Instruction Manual.

4.2　　Connecting the Remote Controller AZ490

The Remote Controller AZ490 runs on a Windows PC.

Connect a PC and NETIMPRESS using an Ethernet cable (10BASE-T or 100BASE-TX).

Install the Control Module, which supports the target microcomputer, in NETIMPRESS. And, download the Micom Pack to the Control Module installed in NETIMPRESS.
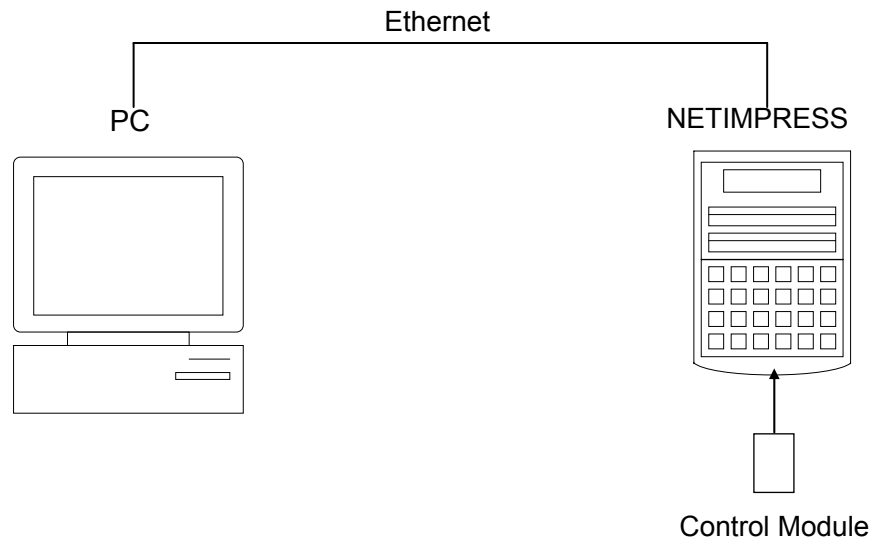
4.3 Downloading Micom Pack

You can download the Micom Pack by using the Remote Controller AZ490, which is available for an additional order. Download the Micom Pack to the Control Module pressing the Load Parameter button on the File Transfer tab.

When you press the Load Parameter button, the dialog box to select a parameter table appears, enabling you to choose an appropriate Micom Pack.
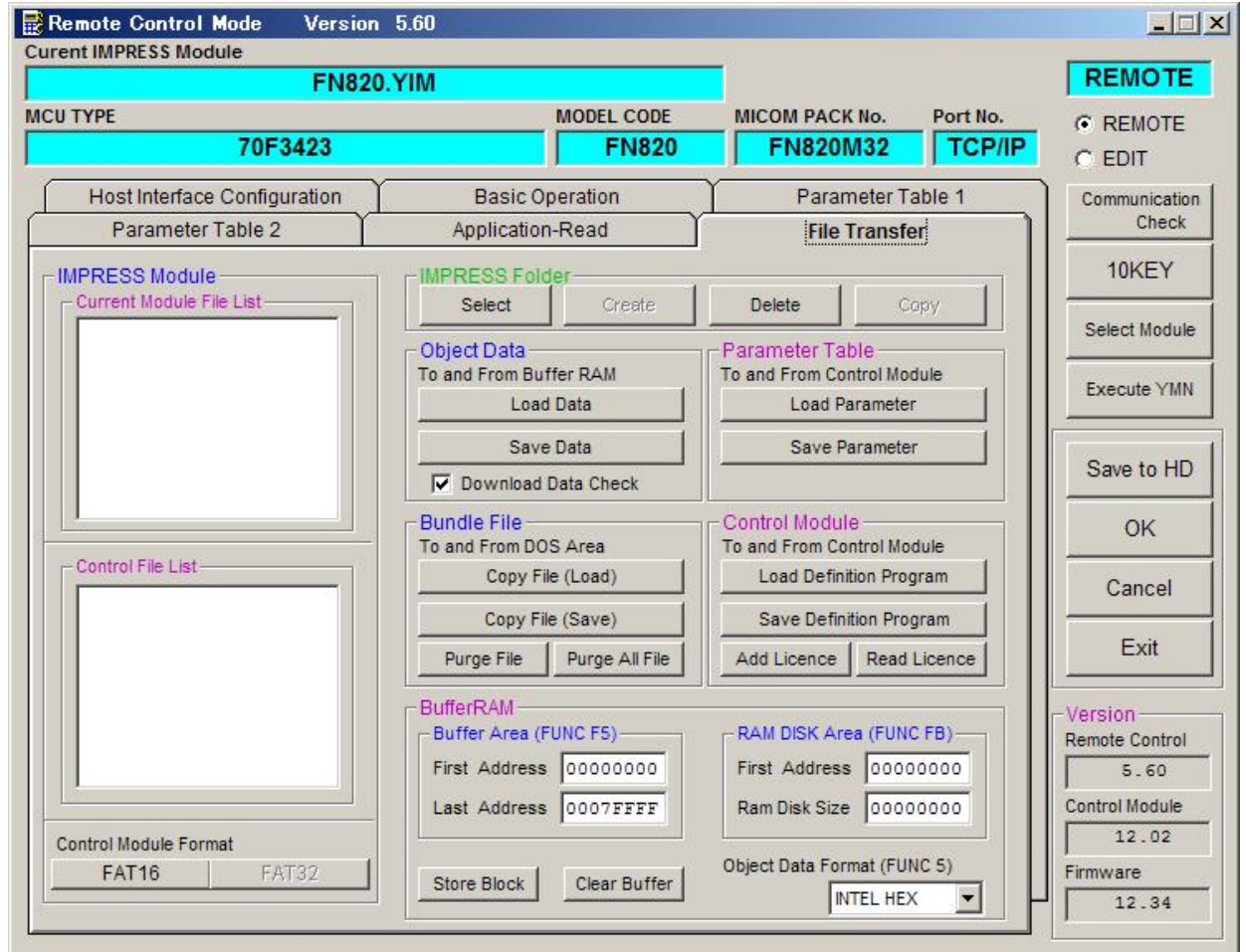
5 Notes and Cautions for Using Control Module

(1) The Control Module FN820 is built for NETIMPRESS. *DO NOT* use this Control Module for any flash microcomputer programmers other than NETIMPESS series.

(2) The Control Module FN820 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 a 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 the Control Module into or remove it from the flash programmer while accessing it.

(6) Use NETIMPRESS with the Control Module inserted into it.