Panasonic INDUSTRY

RTEX Realtime Express

Non-cyclic Command

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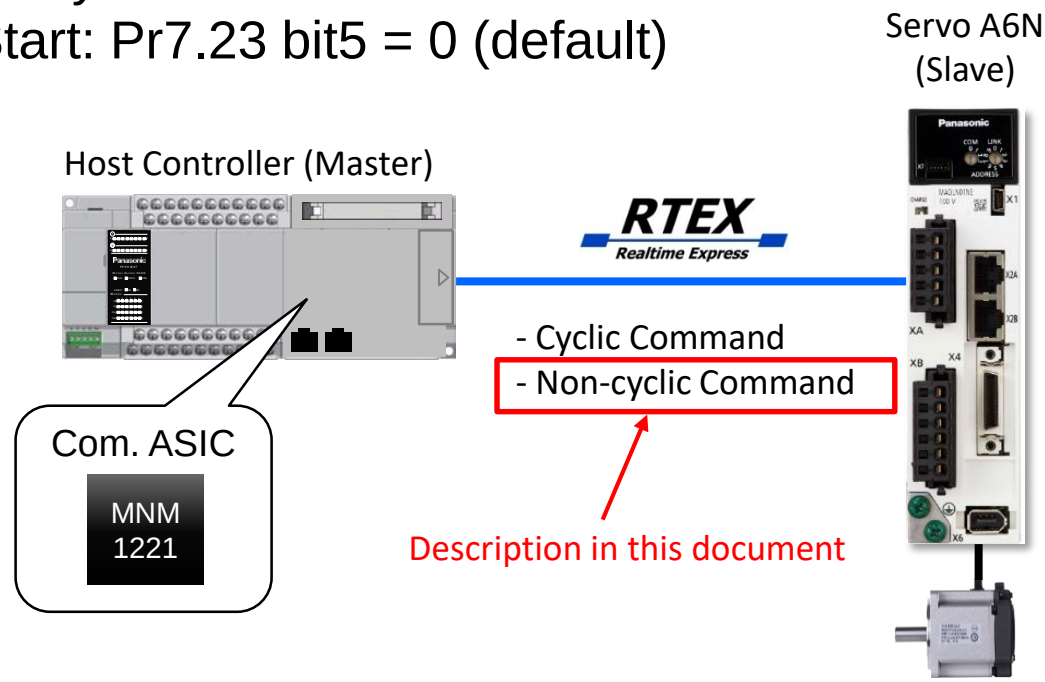
Introduction

This document describes Master operation for RTEX non-cyclic command.

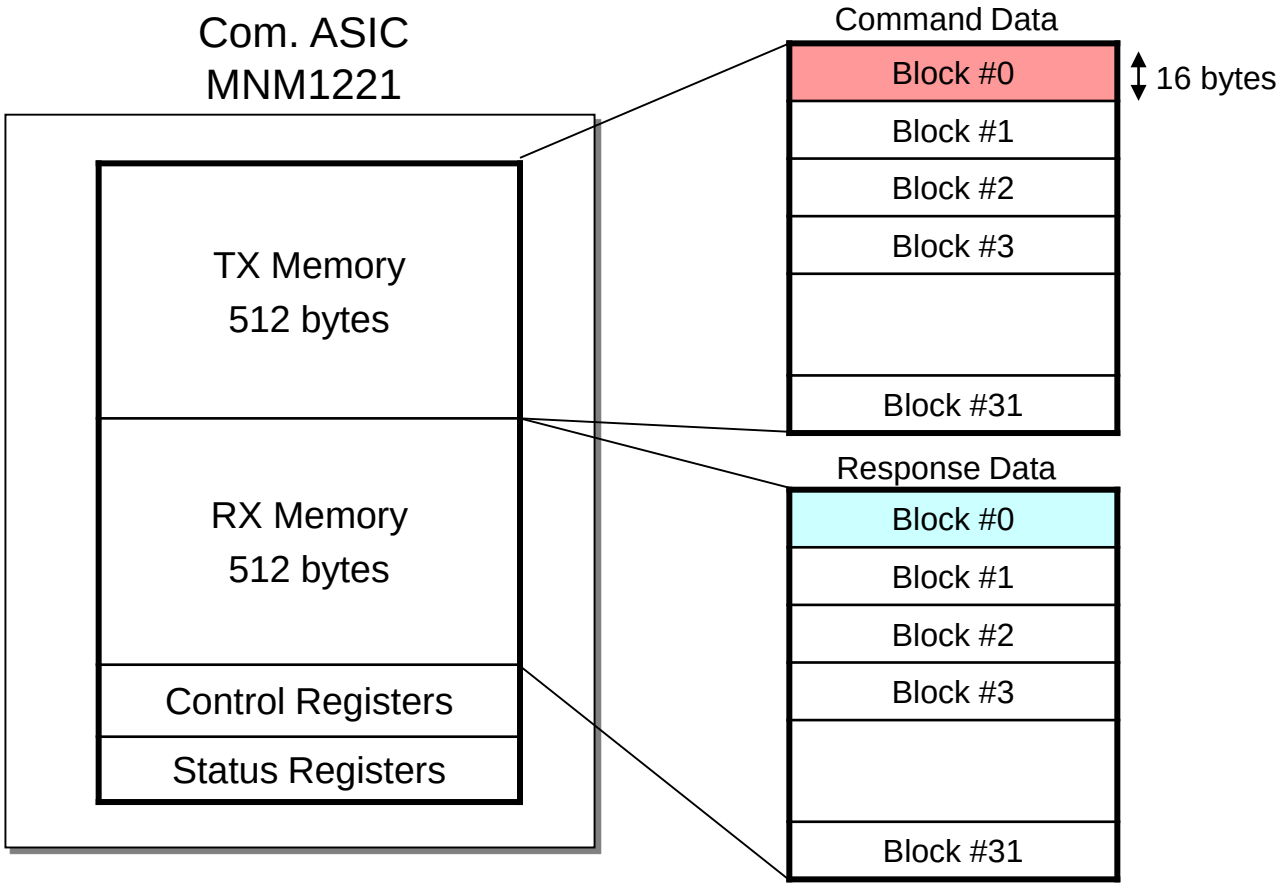
It uses the following examples.

- Cyclic Command: Cyclic Position
- Non-cyclic Command: Parameter, Reset
- Data Size: 16 bytes mode
- Non-cyclic Start: Pr7.23 bit5 = 0 (default)



Data Blocks

As an example, this document uses 16 bytes mode in which one slave occupies one data block on TX/RX memory in MNM1221.



Command Data Block

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	C/R (0)	Update Counter		MAC-ID (0 to 31)				
Byte1	TMG CNT	Command Code						
Byte2	Servo On	0	0	Gain SW	TL SW	Homing Ctrl	0	0
Byte3	Hard Stop	Smooth Stop	Pause	0	SL SW	0	EX-OUT2	EX-OUT1
Byte4	Command Data 1							L
Byte5								ML
Byte6								MH
Byte7								H
Byte8	Command Data 2							L
Byte9								ML
Byte10								MH
Byte11								H
Byte12	Command Data 3							L
Byte13								ML
Byte14								MH
Byte15								H

Response Data Block

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte0	C/R (1)	Update Counter Echo		Actual MAC-ID (0 to 31)				
Byte1	CMD Error	Command Code Echo						
Byte2	Servo Active	Servo Ready	Alarm	Warning	Torque Limited	Homing Complete	In Progress	In Position
Byte3	SI-MON5 /E-STOP	SI-MON4 /EX-SON	SI-MON3 /EXT3	SI-MON2 /EXT2	SI-MON1 /EXT1	Home	POT /NOT	NOT /POT
Byte4	Response Data 1							L
Byte5								ML
Byte6								MH
Byte7								H
Byte8	Response Data 2							L
Byte9								ML
Byte10								MH
Byte11								H
Byte12	Response Data 3							L
Byte13								ML
Byte14								MH
Byte15								H

Command Code

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
byte1		Byte2-7 Definition			Byte8-15 Definition			

In Response

bit7	Meaning
0	Command Accepted
1	Command Error

For Cyclic

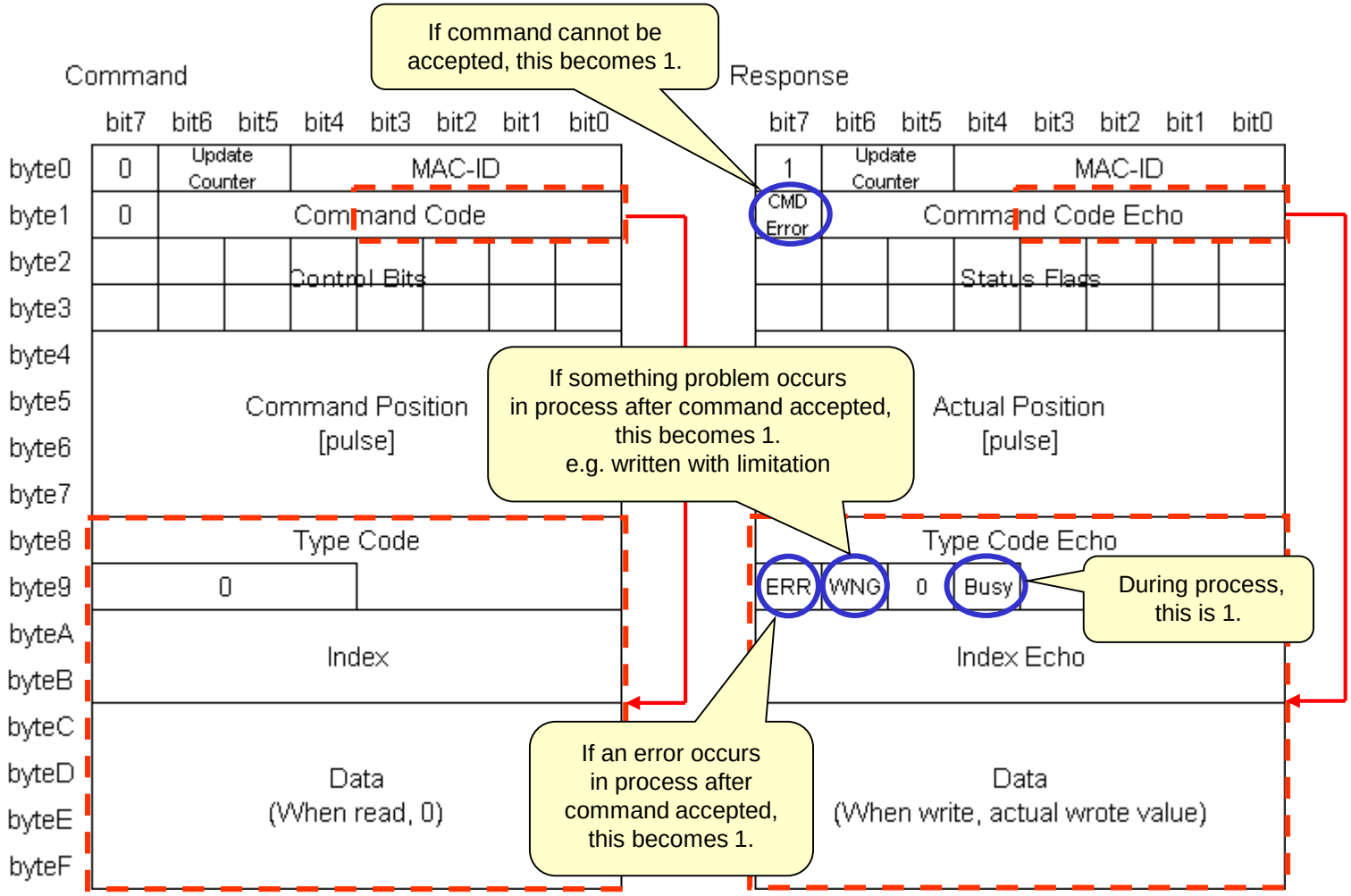
bit6-4	Meaning
0	NOP
1	Profile Position (PP)
2	Cyclic Position (CP)
3	Cyclic Velocity (CV)
4	Cyclic Torque (CT)
Others	Reserved

For Non-cyclic

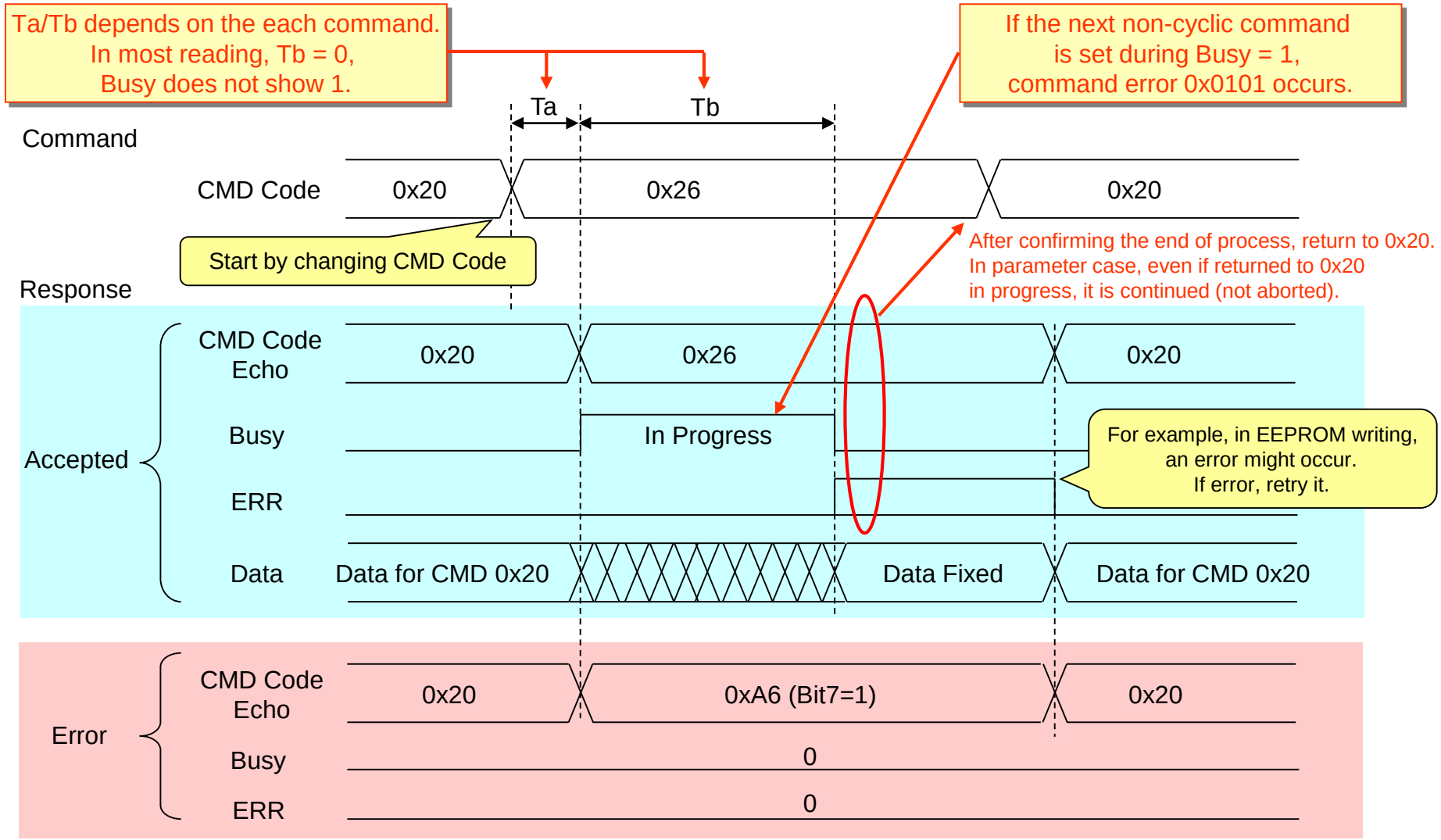
bit3-0	Meaning
0	Normal (Note)
1	Reset
2	System ID
4	Homing
5	Alarm
6	Parameter
7	Profile
A	Monitor
Others	Reserved

Note: When not using non-cyclic command, set bit3-0 to 0.

Potions Used in Non-cyclic Command

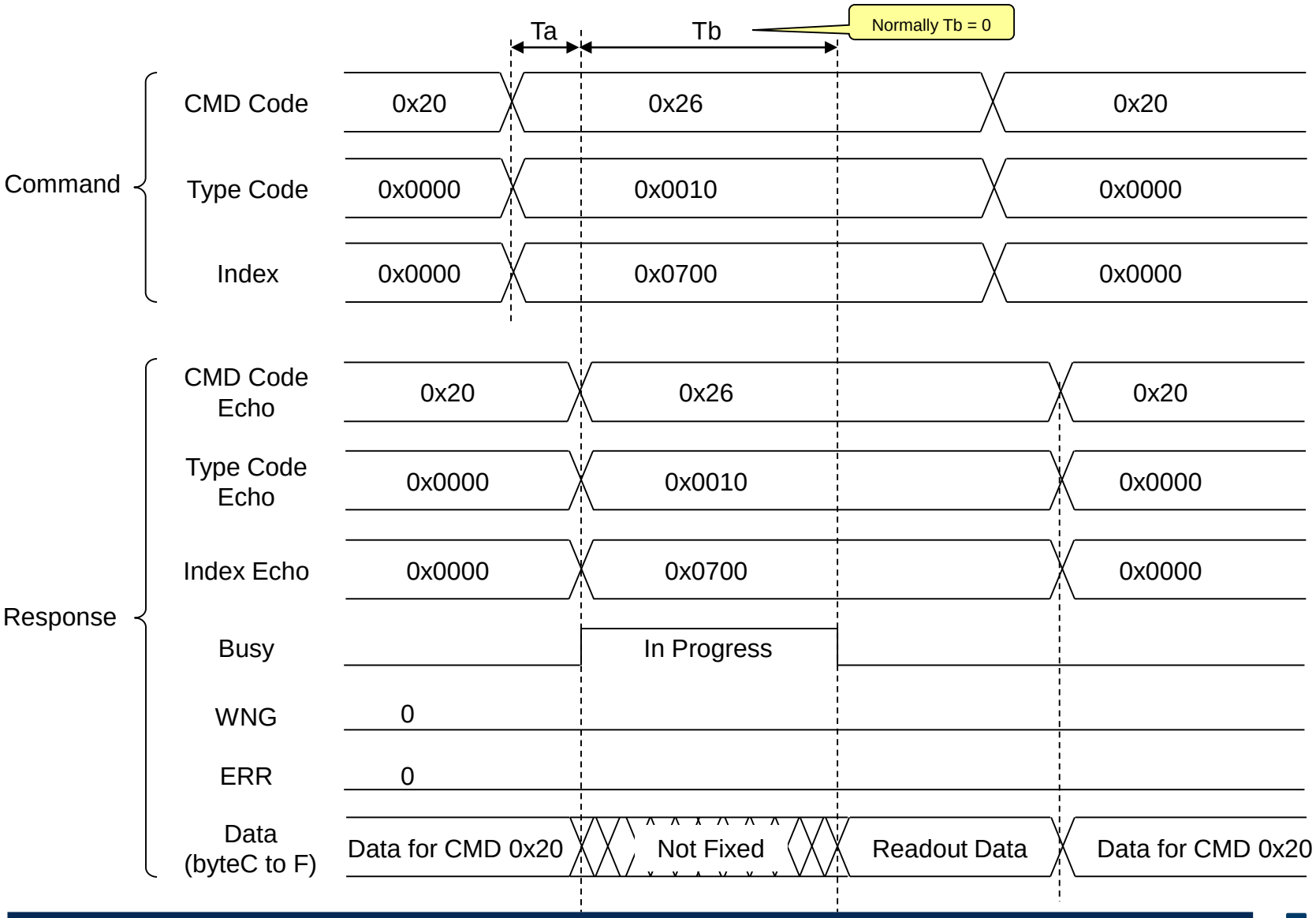


Basic Sequence (Parameter Command)

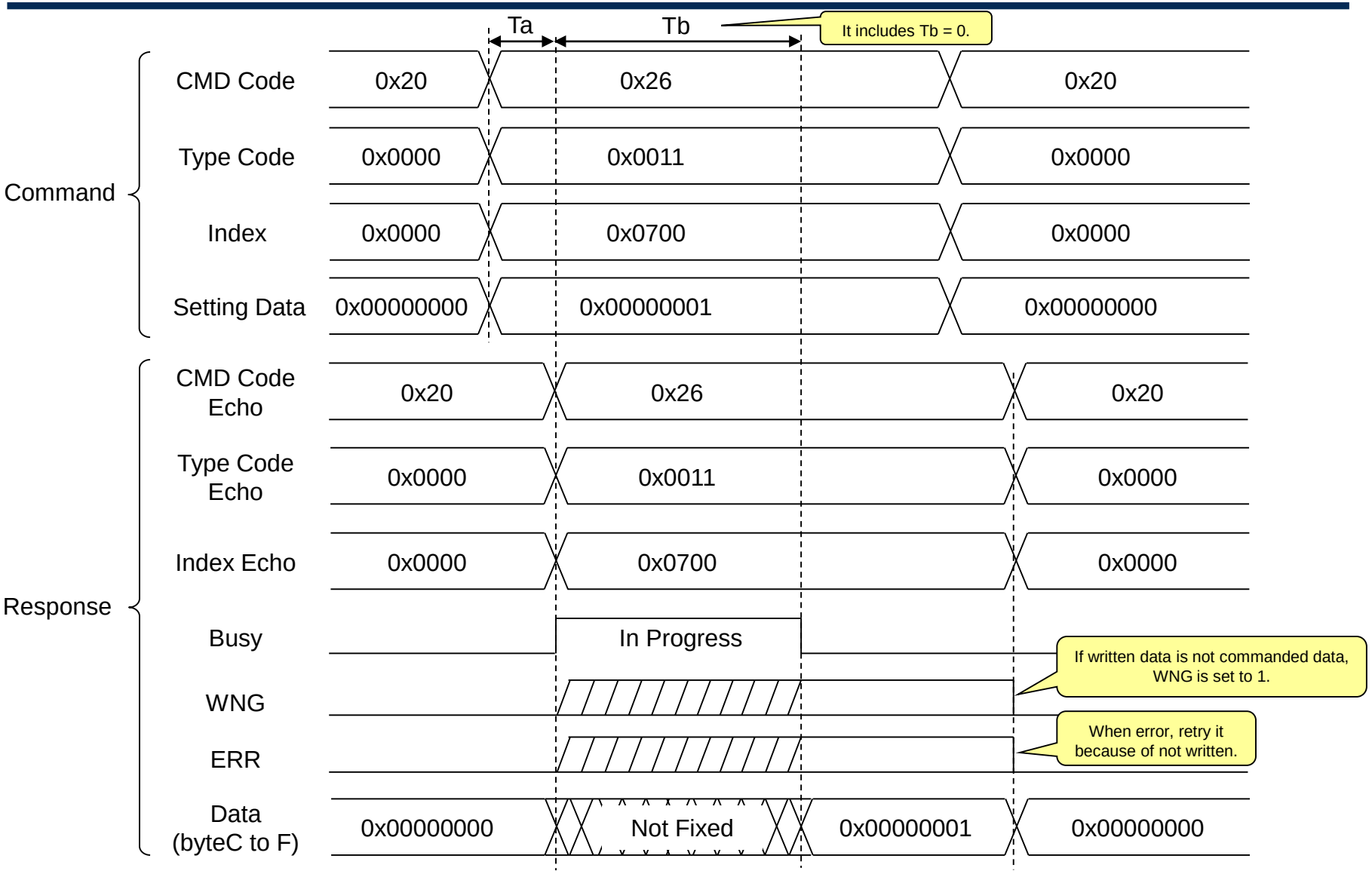


Command error shows “NOT acceptable”. ERR flag shows an error in progress after accepted.

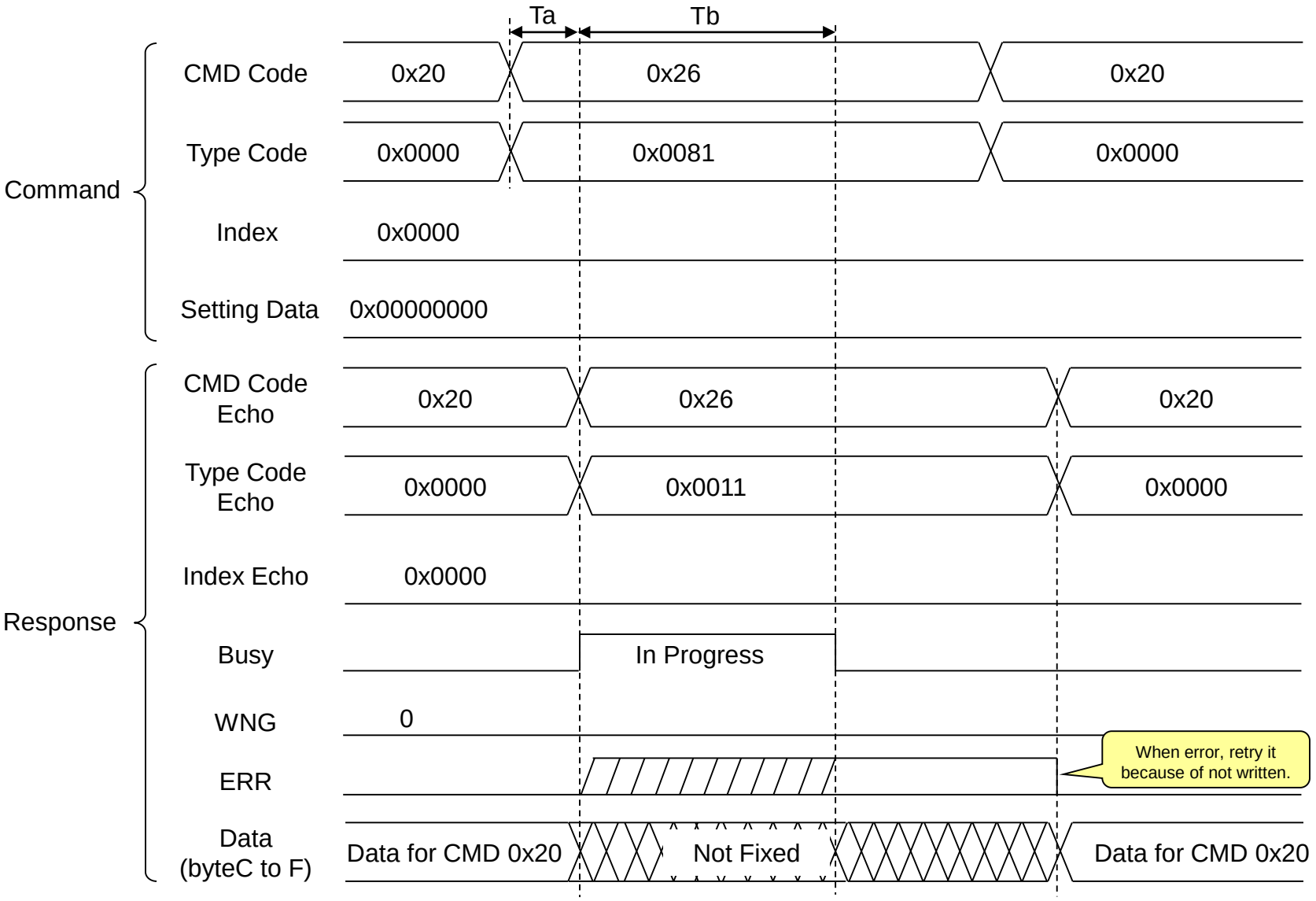
Parameter Reading Example (Pr7.00)



Parameter Writing Example (Pr7.00 = 1)

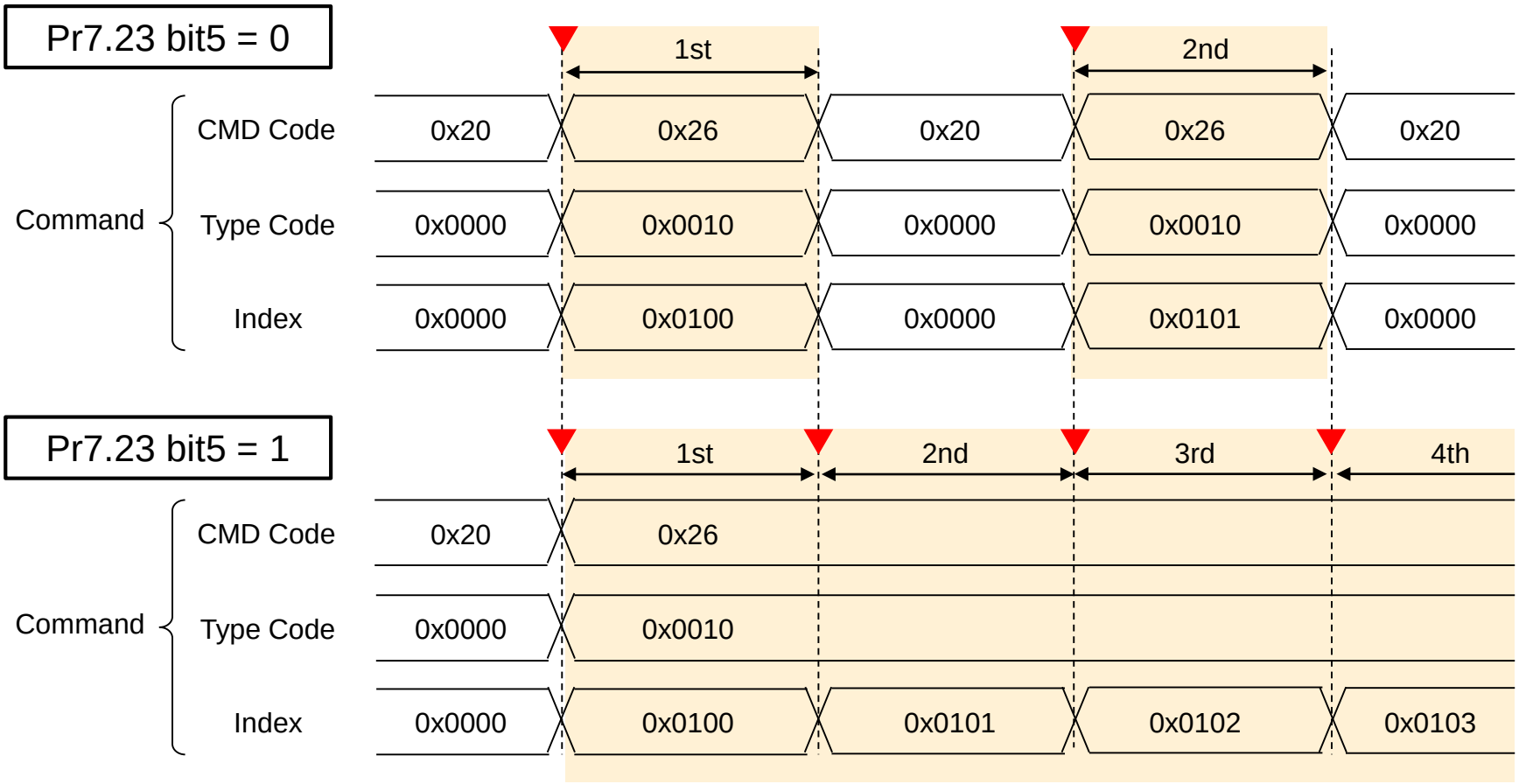


EEPROM Writing Example

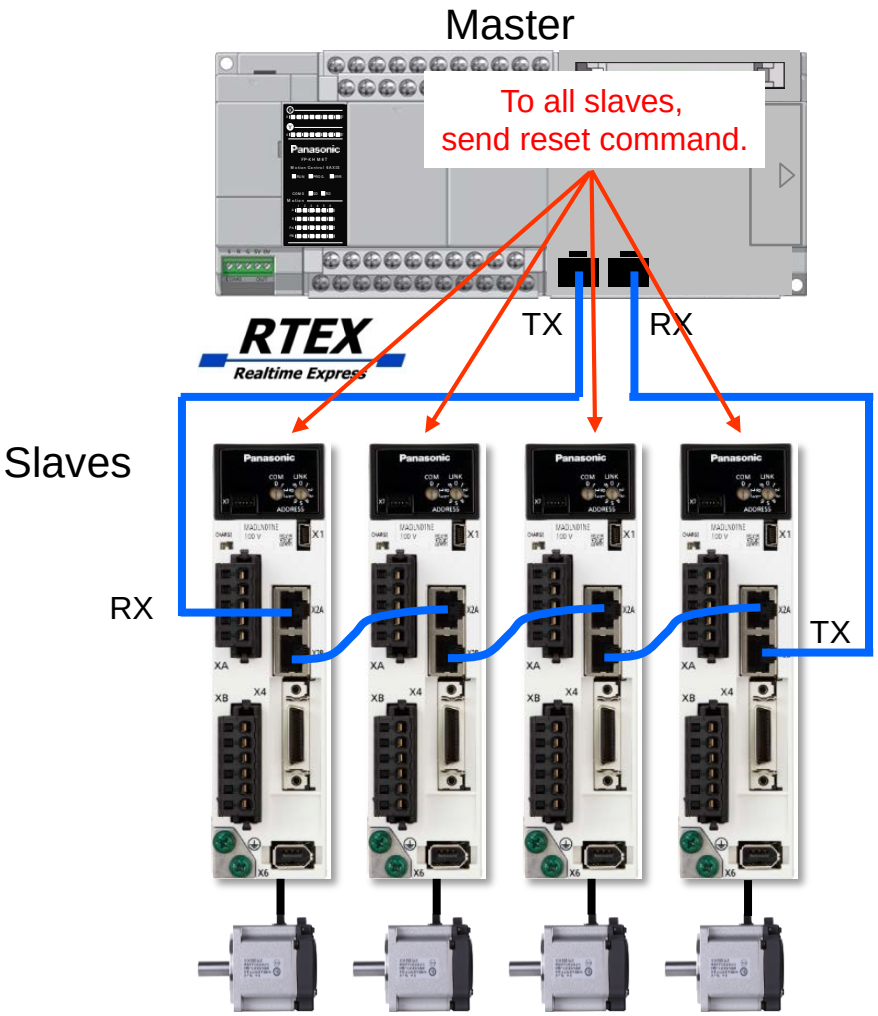


Continuous Access

With changing command code from 0x20 to 0x26, the servo recognizes new command. Therefore it is necessary to return to 0x20 before the next command. If Pr7.23 bit5 = 1, it accepts the change of Type Code or Index as well.



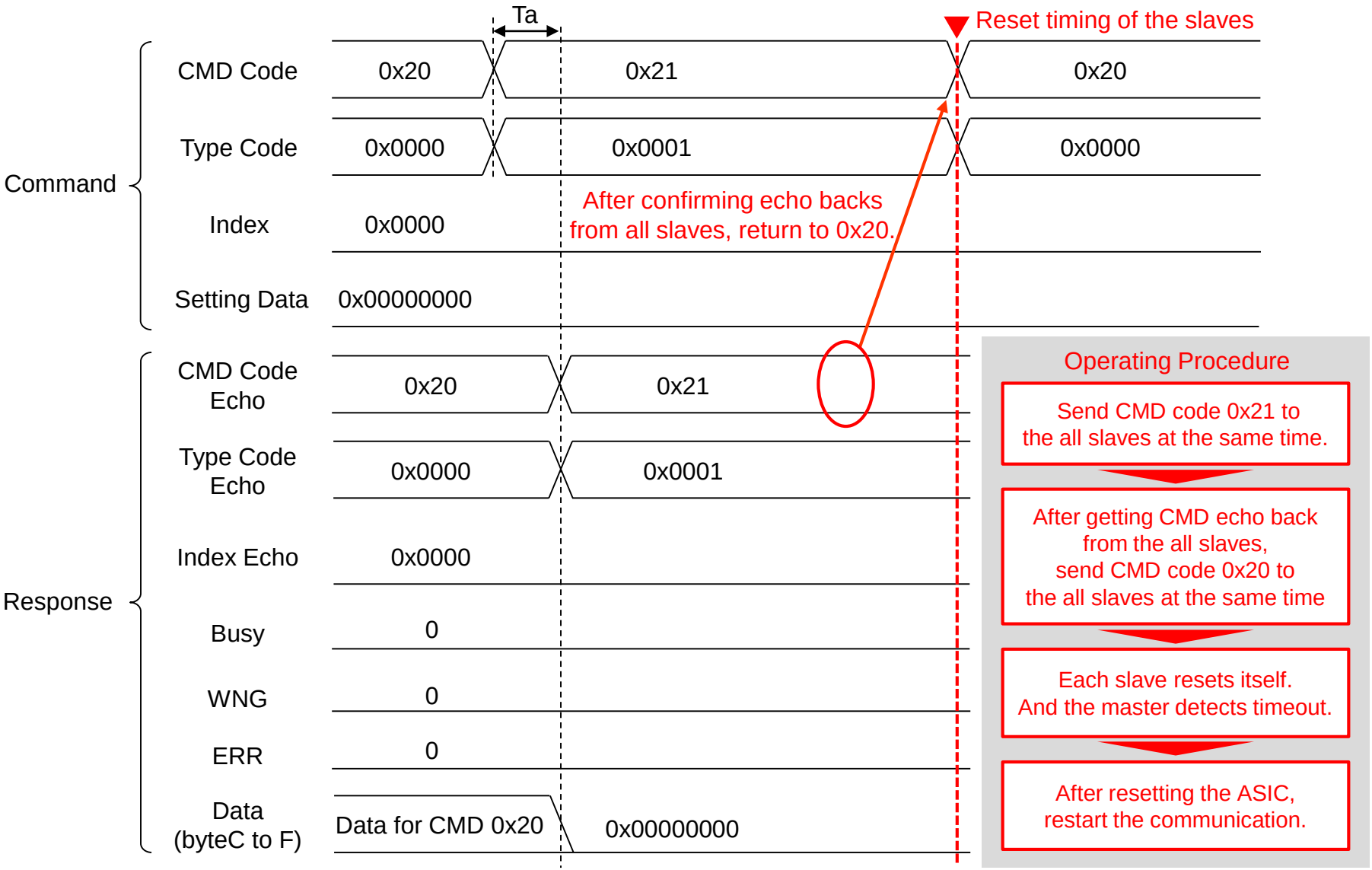
The Difference for Reset Command



Reset command is different from the others as follows:

- Send the command to all slaves at the same time.
- At returning the command from 0x21 to 0x20, the slaves start the reset process.
- After the slaves reset itself, the response stops and the master detects timeout.
- After returning to command 0x20, reset the ASIC and restart the communication.

Reset Example

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