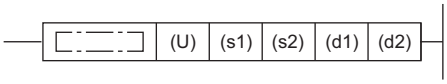
# 14.2 Sending an SLMP Frame

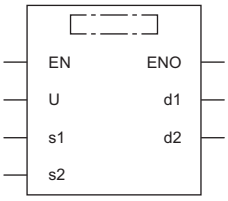
## G(P).SLMPSND

FX5S FX5UJ FX5U FX5UC

These instructions send/receive an SLMP message to the SLMP-compatible device on the same network.

| Ladder | ST |
|---|---|
|  | ENO:=G_SLMPSND(EN,U,s1,s2,d1,d2);<br>ENO:=GP_SLMPSND(EN,U,s1,s2,d1,d2); |

**FBD/LD**




("GP_SLMPSND" enters ☐.)

### Setting data

#### ■Descriptions, ranges, and data types

| Operand | Description | Range | Data type | Data type (label) |
|---|---|---|---|---|
| (U) | Position number of the module connected | 00H to FEH | 16-bit unsigned binary | ANY16 |
| (s1) | Own station start device where control data is stored | ☞ Page 1077 Control data | Device name | ANY16*1 |
| (s2) | Own station start device where request data is stored | ☞ Page 1078 Request data | Device name | ANY16*1 |
| (d1) | Own station start device for storing response data | ☞ Page 1078 Response data | Device name | ANY16*1 |
| (d2) | Device of the own station, which turns on for one scan upon completion of the instruction. When the instruction completes with an error, (d2)+1 also turns on. | — | Bit | ANYBIT_ARRAY (Number of elements: 2) |
| EN | Execution condition | — | Bit | BOOL |
| ENO | Execution result | — | Bit | BOOL |

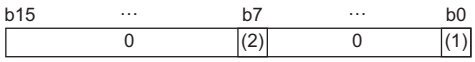
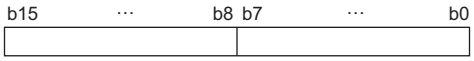
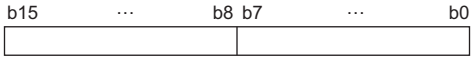
*1 When specifying data with a label, define the array so that an area required for operation can be secured, and specify the array label element.

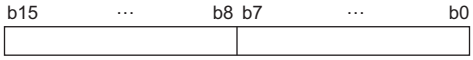
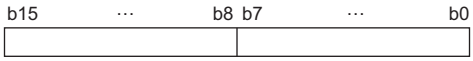
#### ■Applicable devices

| Operand | Bit | Word | | | Double word | | Indirect specification | Constant | | | Others (U) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | X, Y, M, L, SM, F, B, SB, S | T, ST, C, D, W, SD, SW, R | U☐\G☐ | Z | LC | LZ | | K, H | E | $ | |
| (U) | — | ○ | — | — | — | — | ○ | ○ | — | — | ○ |
| (s1) | — | ○ | — | — | — | — | ○ | — | — | — | — |
| (s2) | — | ○ | — | — | — | — | ○ | — | — | — | — |
| (d1) | — | ○ | — | — | — | — | ○ | — | — | — | — |
| (d2) | ○ | ○*1 | — | — | — | — | — | — | — | — | — |

*1 T, ST, and C cannot be used.

## ■Control data

| Device | Item | Description | Setting range | Set by |
|---|---|---|---|---|
| (s1)+0 | Execution/error completion type |  <br>(1) Execution type (b0)<br>• 0: Without arrival check (The instruction is regarded as completed when a request message is sent from own station.)*1<br>• 1: With arrival check (The instruction is regarded as completed when a response message is received from the target device.)<br>(2) Error completion type (b7)<br>Specify whether to set data at completion with an error.<br>• 0: Do not set data in (s1)+13 and later at completion with an error. (Clear (s1)+13 and later.)<br>• 1: Set data at completion with an error in (s1)+13 and later. | 0000H<br>0001H<br>0080H<br>0081H | User |
| (s1)+1 | Completion status | The instruction completion status is stored.<br>0000H: Normal<br>Other than 0000H: Error (error code) | — | System |
| (s1)+2 | Own station channel | Specify the channel to be used by the own station.<br>Whether or not a serial number is given to the request message depends on the channel.*2<br>• 1: No serial number is given<br>• 2 to 9: Serial number is given<br>• 10 to 17: Station number extension frame | 1 to 17 | User |
| (s1)+3 | IP address of target device (third and fourth octets) | Specify the IP address (third and fourth octets) of target device.<br>  <br>• b8 to b15: Third octet<br>• b0 to b7: Fourth octet | 00000001H to DFFFFFFEH (both (s1)+3 and (s1)+4 together)<br>(1 to 3758096382) | User |
| (s1)+4 | IP address of target device (first and second octets) | Specify the IP address (first and second octets) of target device.<br>  <br>• b8 to b15: First octet<br>• b0 to b7: Second octet | | User |
| (s1)+5 | Destination port number | Specify the destination port number. | 1 to 65534<br>(1 to FFFEH) | User |
| (s1)+6 | Request destination network number | 0000H (fixed) | 0000H | User |
| (s1)+7 | Request destination station number | 00FFH (fixed) | 00FFH | User |
| (s1)+8 | Request destination module I/O number | Specify the request destination module I/O number.<br>• 03E0H: Multiple CPU No. 1<br>• 03E1H: Multiple CPU No. 2<br>• 03E2H: Multiple CPU No. 3<br>• 03E3H: Multiple CPU No. 4<br>• 03FFH: Own station/control CPU | 03E0H to 03E3H, 03FFH | User |
| (s1)+9 | Request destination multidrop station number | Specify a multidrop number of the target device.<br>If the device does not have the multidrop number, fixed to 0000H. | 0000H to FFFEH | User |
| (s1)+10 | Number of resends | Effective when the execution type specified by (s1)+0 is "1: With arrival check".<br>■At instruction execution<br>Specify the number of resends to be performed if the instruction is not completed within the monitoring time specified by (s1)+11.<br>• 0 to 15 (times)<br>■At completion of instruction<br>The number of resends performed (result) is stored.<br>• 0 to 15 (times)*3 | 0 to 15 | User/ system |
| (s1)+11 | Arrival monitoring time | Set the monitoring time until completion of processing. If processing is not completed within the monitoring time, the request is resent the number of times specified in (s1)+10.<br>• 0: 10 seconds<br>• 1 to 32767: 1 to 32767 seconds | 0 to 32767 | User |

| Device | Item | Description | Setting range | Set by |
|---|---|---|---|---|
| (s1)+12 | Clock setting flag | The validity status (valid or invalid) of the data in (s1)+13 and later is stored.<br>Note that the data in (s1)+13 and later is cleared when the instruction is completed successfully.<br>• 0: Invalid<br>• 1: Valid | — | System |
| (s1)+13 | Clock data<br>(Set only in an abnormal state) | Upper 8 bits: Month (01H to 12H)<br>Lower 8 bits: Year (00H to 99H: Lower two digits of the year) | — | System |
| (s1)+14 | | Upper 8 bits: Hour (00H to 23H)<br>Lower 8 bits: Day (01H to 31H) | | |
| (s1)+15 | | Upper 8 bits: Second (00H to 59H)<br>Lower 8 bits: Minute (00H to 59H) | | |
| (s1)+16 | | Upper 8 bits: Year (00H to 99H: Upper two digits of the year)<br>Lower 8 bits: Day of the week (00H (Sun.) to 06H (Sat.)) | | |
| (s1)+17 | IP address of error detected device (third and fourth octets) | The IP address (third and fourth octets) of the station where an error was detected is stored.<br>  <br>• b8 to b15: Third octet<br>• b0 to b7: Fourth octet | — | System |
| (s1)+18 | IP address of error detected device (first and second octets) | The IP address (first and second octets) of the station where an error was detected is stored.<br>  <br>• b8 to b15: First octet<br>• b0 to b7: Second octet | — | System |

*1 If (s1)+0 is set to "0: Without arrival check", receive data is not set. Set 0 in (s1)+0 in the following cases:
· When a command that does not return a response message is used
· When a response message is not referred to

*2 Set the serial numbers when sending multiple request messages to the same SLMP-compatible device.
Serial numbers to be set are automatically numbered by the system.

*3 If an error was detected, the number of resends performed (result) between error detection and resend stop is stored.

## ■Request data

| Device | Item | Description | Setting range | Set by |
|---|---|---|---|---|
| (s2)+0 | Request data length | Specify the data length from the monitoring timer to the request data. (In units of bytes) | 1 to 2000 | User |
| (s2)+1 | Monitoring timer | Set the waiting time for the external device that received a request message to wait for the response after it issued a processing request to the request destination. (Unit: Increments of 250 ms)<br>• 0: Infinite wait<br>• 1 to 65535: 1 to 65535 × 250 ms | 0 to 65535 | User |
| (s2)+2 to (s2)+n | Request data | The request data of the SLMP message is stored. | Refer to the specifications of the target device. | User |

## ■Response data

| Device | Item | Description | Setting range | Set by |
|---|---|---|---|---|
| (d1)+0 | Response data length | The data length from the end code to the response data is stored. (In units of bytes) | — | System |
| (d1)+1 | End code | The result of command processing is stored. In normal end, 0 is stored. In abnormal end, an error code set by the target device is stored.*1 | — | System |
| (d1)+2 to (d1)+n | Response data | Execution results for the request data are set.<br>(Some commands do not return response data.) | —*2 | System |

*1 For the set error code and the corresponding error description, check the specifications of the target device.

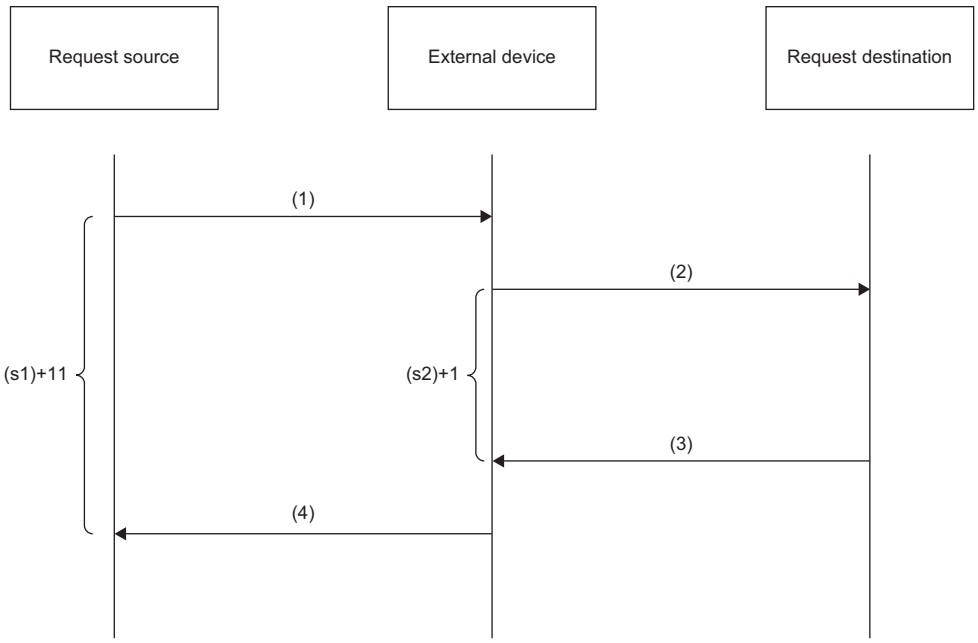
*2 For details on the response data, refer to the MELSEC iQ-F FX5 User's Manual (Communication).

## Processing details

- This instruction sends the request data in the device specified by (s2) and later to the external device specified by the target device IP address in the control data. When a response message is received from the target device, it is stored in the device specified by (d1).
- The SLMPSND instruction uses the UDP/IP communication methods in binary code.
- The completion status of the SLMPSND instruction can be checked with the completion device (d2) and the completion status indication device (d2)+1.

| Device | Operation |
|---|---|
| Completion device (d2) | This device turns on in the END processing of the scan where the SLMPSND instruction completes, and turns off in the next END processing. |
| Completion status indication device (d2)+1 | This device turns on or off depending on the completion status of the SLMPSND instruction.<br>When completed normally: The device remains off.<br>When completed with an error: The device turns on in the END processing of the scan where the SLMPSND instruction completes, and turns off in the next END processing. |

- When executing multiple SLMPSND instructions concurrently, be careful not to overlap the channels of the SLMPSND instructions. Multiple SLMPSND instructions specifying the same channels cannot be used concurrently.
- When the execution conditions of the SLMPSND instructions in the same channel are satisfied in the same sequence scan, only the SLMPSND instruction that has been executed first is enabled and the subsequent SLMPSND instructions are not executed. In addition, any subsequent SLMPSND instruction of the same channel setting as the SLMPSND instruction being executed is not executed.
- Specify the arrival monitoring time ((s1)+11) of the control data and monitoring timer ((s2)+1) of the request frame so that the arrival monitoring time ≥ monitoring timer.

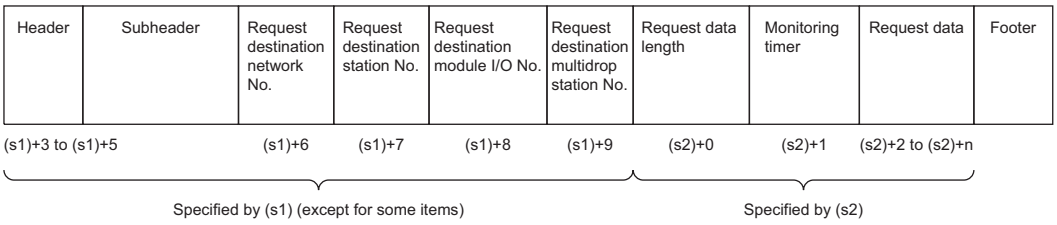



(1) Request message
(2) Processing request from target device to request destination
(3) Processing response from request destination to target device
(4) Response message

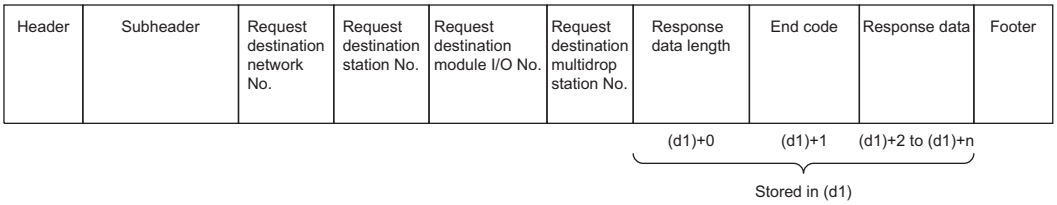
## ■Message format (3E/4E frame)

The following figures show the request data of 3E/4E frame and the response data in normal/abnormal end.

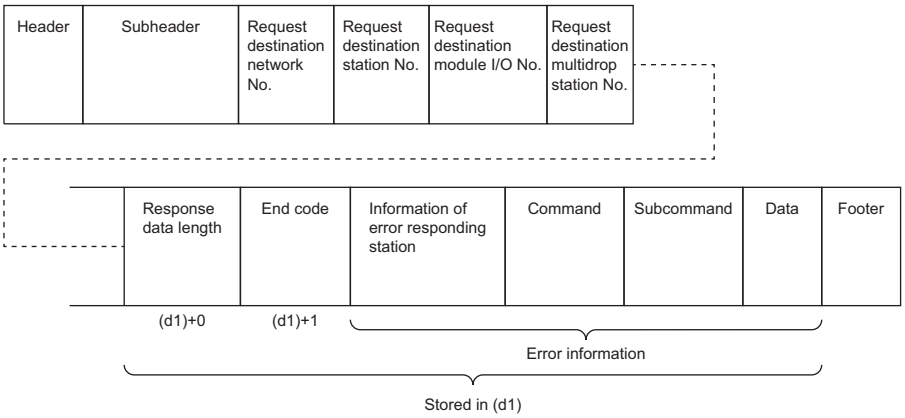
● Request message




● Response message (in normal end)




● Response message (in abnormal end)

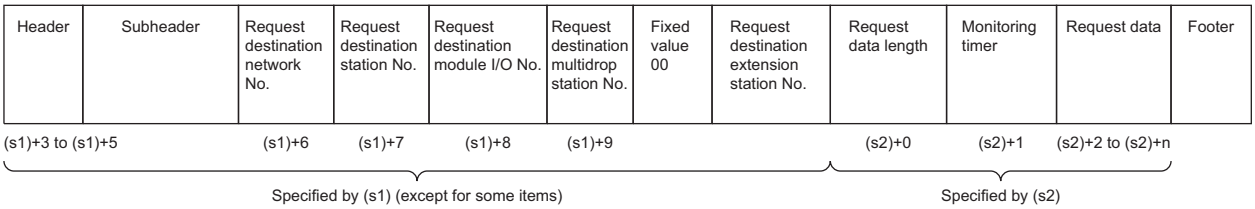



The network number, station number, request destination module I/O number, and multidrop station number are stored to the information of the error responding station.

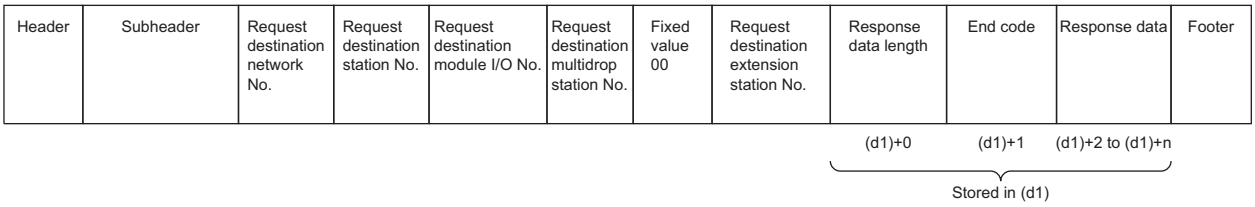
## ■Message format (station number extension frame)

The following figures show the request data of station number extension frame and the response data in normal/abnormal end.

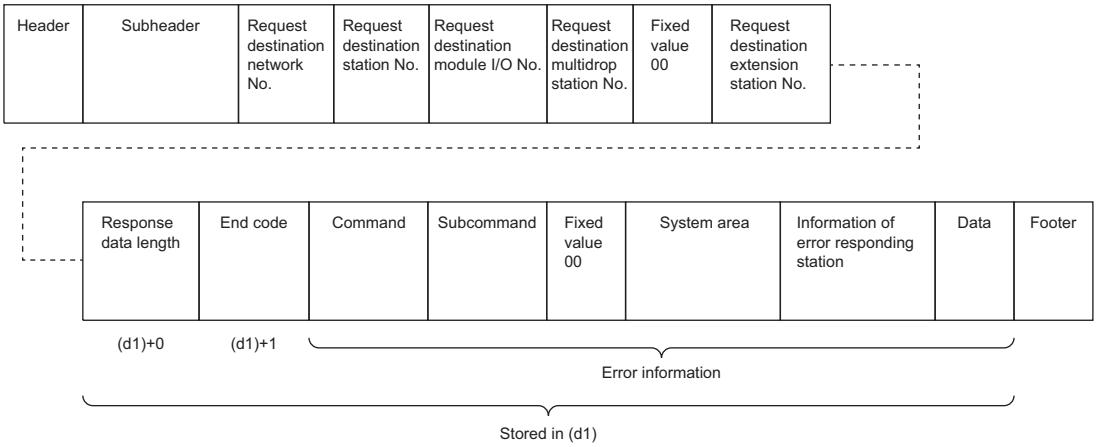
● Request message




● Response message (in normal end)




● Response message (in abnormal end)

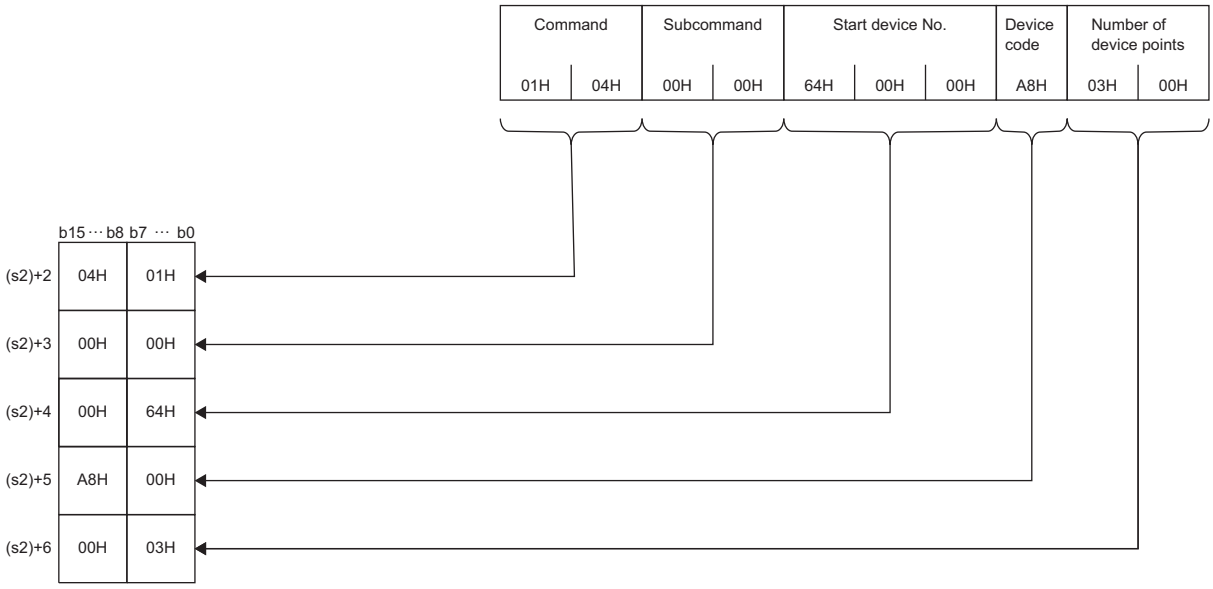



The network number, station number, request destination module I/O number, multidrop station number, 00 (fixed value), and extension station number are stored to the information of the error responding station.

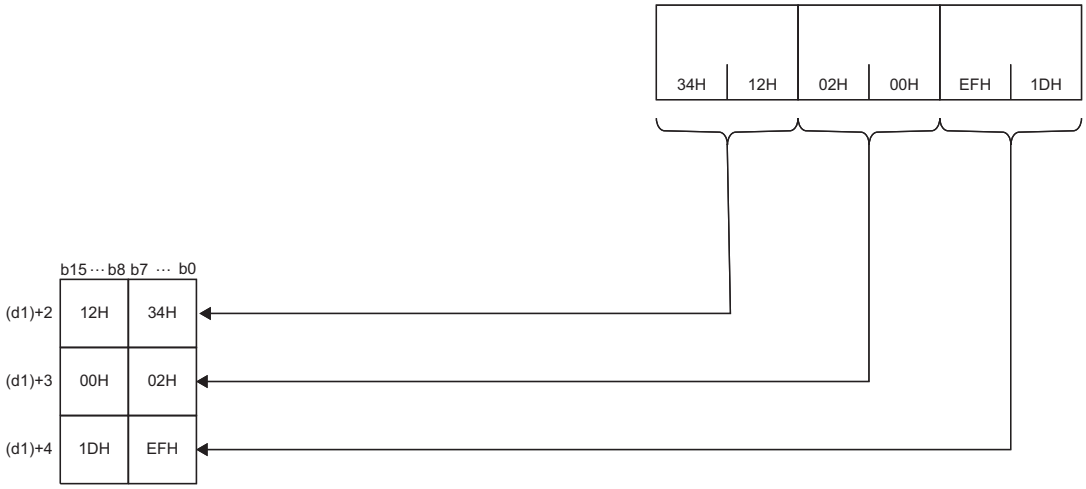
**Ex.**

When sending "Read (command: 0401H)" (reading in units of words) which reads the value in D100 to D102

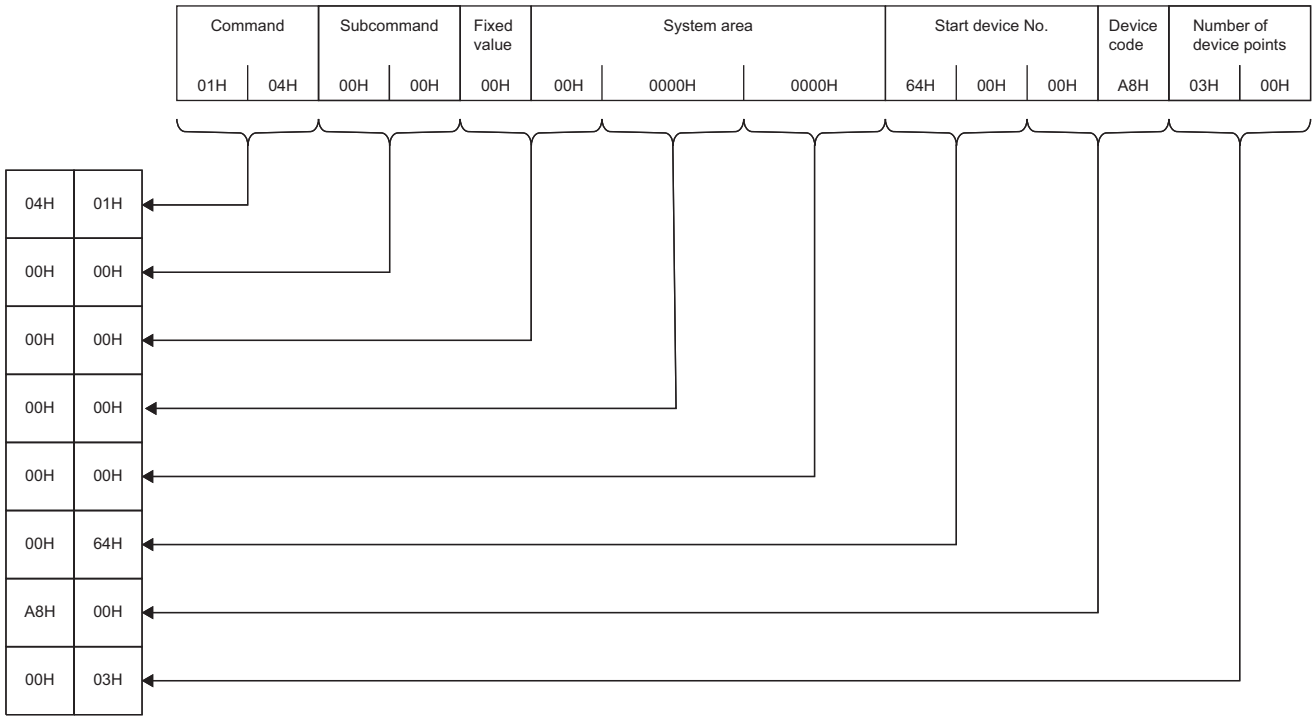
● The following example shows that request data is stored in (s2)+2 and later (3E/4E frame).



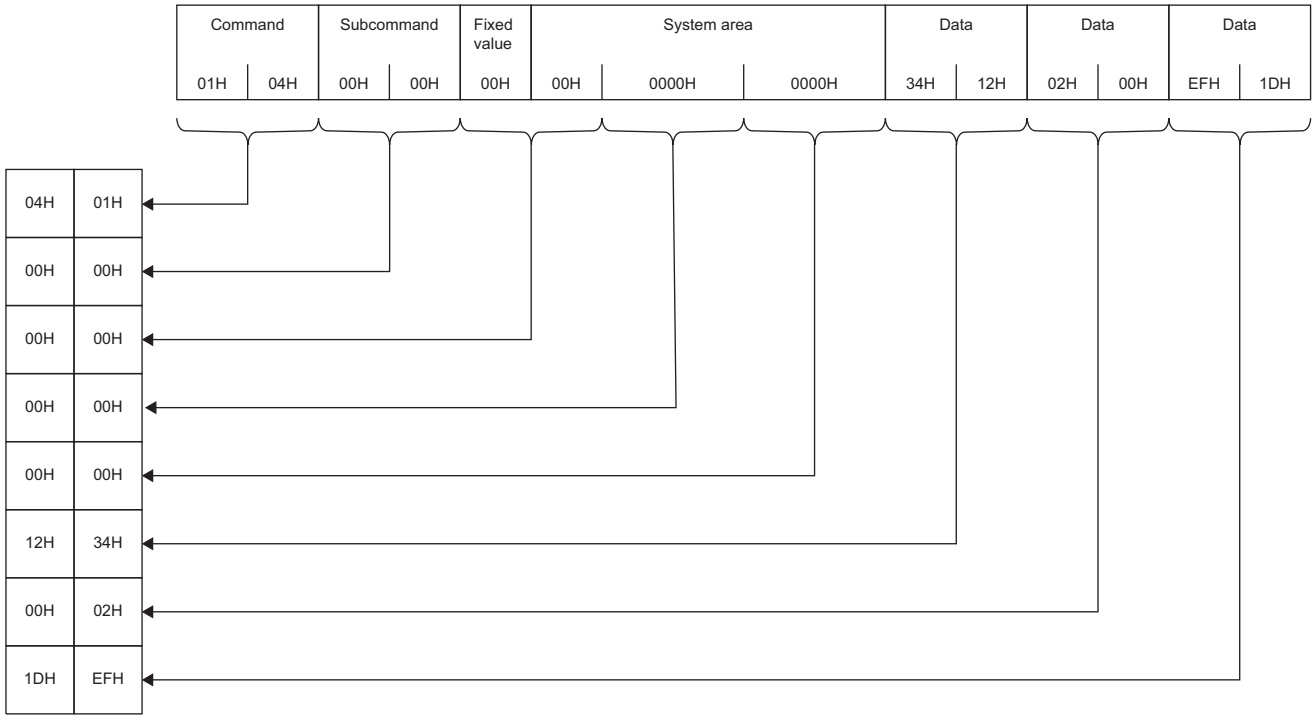

● The following example shows that response data is stored in (d1)+2 and later (3E/4E frame).



● The following example shows that request data is stored in (s2)+2 and later (station number extension frame).




● The following example shows that response data is stored in (d1)+2 and later (station number extension frame).




## Operation error

| Error code ((s1)+1) | Description |
|---|---|
| 1000H to 3FFFH | Refer to MELSEC iQ-F FX5 CC-Link IE TSN Master/Local Module User's Manual. |
| 4000H to 4FFFH | Refer to MELSEC iQ-F FX5 User's Manual (Application). |
| D000H to DFFFH | Refer to MELSEC iQ-F FX5 CC-Link IE TSN Master/Local Module User's Manual. |

**Point**

The SLMPSND instruction is successfully completed even if the target device returns an abnormal response. When the SLMPSND instruction is completed successfully, the response is whether normal or abnormal can be identified by the end code of the response frame.
When an abnormal response is returned, check the manual of the SLMP-compatible device being used and take corrective action.