TECHNICAL BULLETIN

Thank you for your continued support of Mitsubishi programmable logic controllers, MELSEC-Q, QnA and A series.

The TCP Maximum Segment Size Option transmission for the specifications of the Ethernet interface modules has been changed as described below.
Please pay attention to the precautions in order to understand the functional changes implemented.

## 1. TCP Maximum Segment Size Option Transmission

The Ethernet interface modules can enable the RFC-compliant TCP Maximum Segment Size Option transmission at the time of TCP transmission or retransmission.

2. Applicable Models

(a) MELSEC-Q series
- QJ71E71-100, QJ71E71-B5 and QJ71E71-B2 with the first 5 digits of serial <u>No. 05051 or later</u>

The serial No. of the MELSEC-Q series Ethernet interface module can be checked on the rating plate, which is situated on the side of the module.
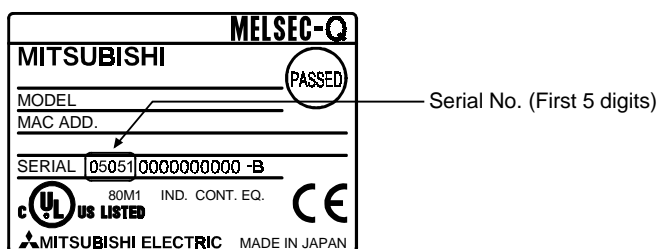
(b) MELSEC-QnA, -A series
- AJ71QE71N-T, AJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-T, A1SJ71QE71N-B5, A1SJ71QE71N-B2, AJ71E71N-T, AJ71E71N-B5, AJ71E71N-B2, A1SJ71E71N-T, A1SJ71E71N-B5, A1SJ71E71N-B2, which software version is <u>"E" or later</u>.

3. TCP Maximum Segment Transmission Setting

The TCP Maximum Segment Size Option transmission can be enabled or disabled.
(a) Setting for MELSEC-Q series

Address DEC (HEX)	Application	Name
30 ($1E_H$)	Initial processing parameter setting area	TCP Maximum Segment transmission setting area 　0_H　　：Enable TCP Maximum Segment Size Option transmission 　8000_H：Disable TCP Maximum Segment Size Option transmission

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[Title] Ethernet Interface Module   **[Date of Issue]** Sep., '03
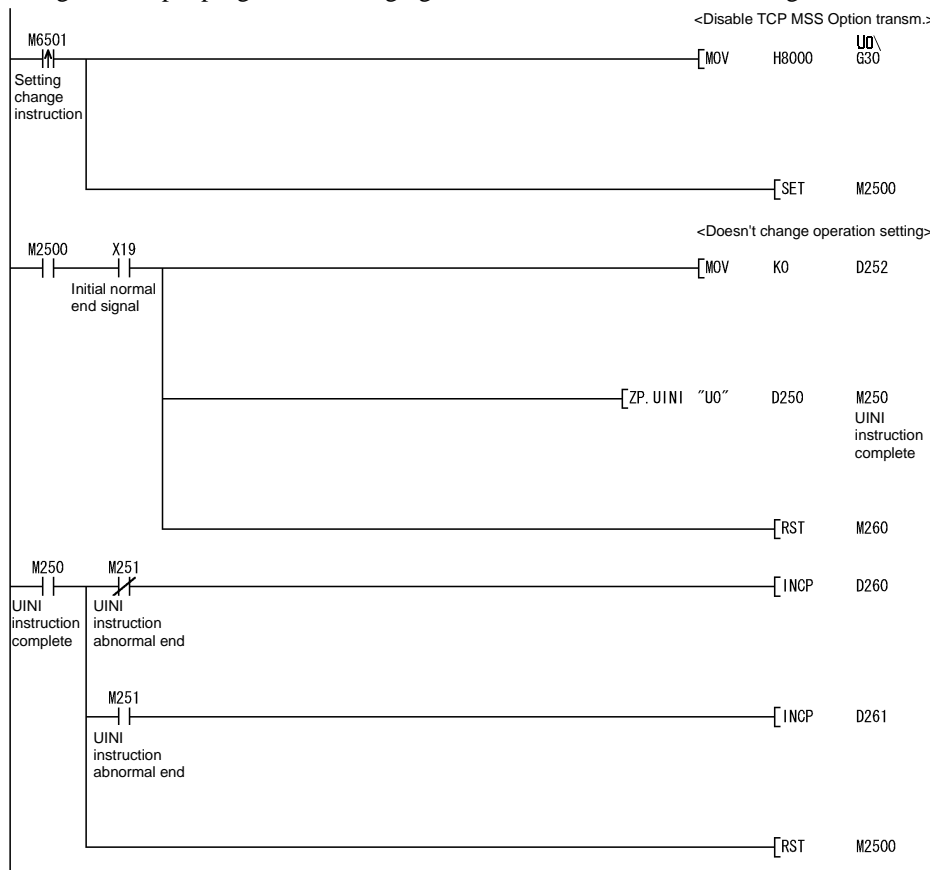Changes to Specifications of TCP Maximum Segment Size Option Transmission
(Revised)
[Relevant Models] QJ71E71-100, QJ71E71-B5, QJ71E71-B2, AJ71QE71N-T,
AJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-T, A1SJ71QE71N-B5,
A1SJ71QE71N-B2, AJ71E71N-T, AJ71E71N-B5, AJ71E71N-B2,
A1SJ71E71N-T, A1SJ71E71N-B5, A1SJ71E71N-B2

When changing between enable/disable for the TCP packet transmission, set a new value in the TCP Maximum Segment transmission setting area, buffer memory (Address: $1E_H$), and then reinitialize the module. (See Section 6. for the initial default value.) Re-initializing the module makes the changed setting effective.

1) MELSEC-Q series sample program
   The following is a sample program for changing to disable the TCP Maximum Segment transmission setting.

```
                                                          <Disable TCP MSS Option transm.>
   M6501                                                               U0\
   ─┤↑├─────────────────────────────────────────────────[MOV  H8000   G30  ]
 Setting
 change
 instruction
                                                                 ──────[SET  M2500 ]

                                                          <Doesn't change operation setting>
   M2500   X19
   ─┤├─────┤├──────────────────────────────────────────────[MOV  K0    D252 ]
         Initial normal
         end signal
                                                 ─[ZP. UINI  "U0"   D250   M250 ]
                                                                          UINI
                                                                          instruction
                                                                          complete

                                                                 ──────[RST  M260 ]

   M250    M251
   ─┤├─────┤/├──────────────────────────────────────────────────[INCP  D260 ]
 UINI      UINI
 instruction instruction
 complete   abnormal end

           M251
           ─┤├──────────────────────────────────────────────────[INCP  D261 ]
         UINI
         instruction
         abnormal end

                                                                 ──────[RST  M2500 ]
```

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[Title] Ethernet Interface Module **[Date of Issue]** Sep., '03
Changes to Specifications of TCP Maximum Segment Size Option Transmission (Revised)
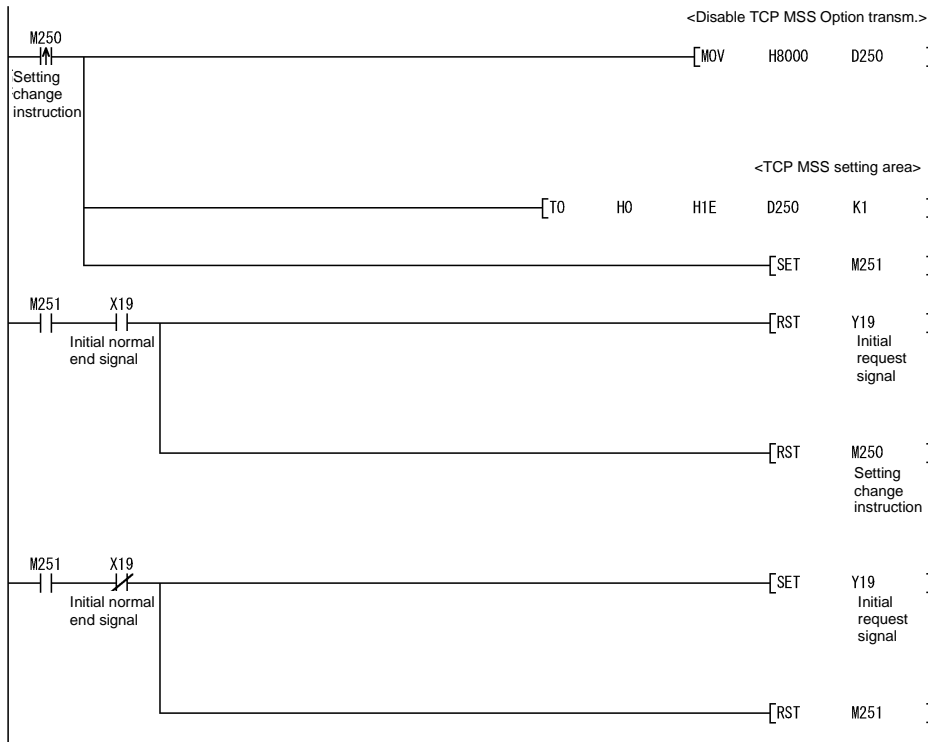
[Relevant Models] QJ71E71-100, QJ71E71-B5, QJ71E71-B2, AJ71QE71N-T, AJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-T, A1SJ71QE71N-B5, A1SJ71QE71N-B2, AJ71E71N-T, AJ71E71N-B5, AJ71E71N-B2, A1SJ71E71N-T, A1SJ71E71N-B5, A1SJ71E71N-B2

(b) Setting for MELSEC-QnA and A series
When changing between enable/disable for the TCP packet transmission, set a new value in the TCP Maximum Segment transmission setting area, buffer memory (QnA series address: $1E_H$, A series address: 06_H), and then execute the re-initial processing. Re-initializing the module makes the changed setting effective.

1) MELSEC-QnA series sample program
The following is a sample program for changing to disable the TCP Maximum Segment transmission setting.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE : 1-8-12, OFFICE TOWER Z 14F HARUMI CHUO-KU 104-6212, JAPAN
NAGOYA WORKS : 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA, JAPAN

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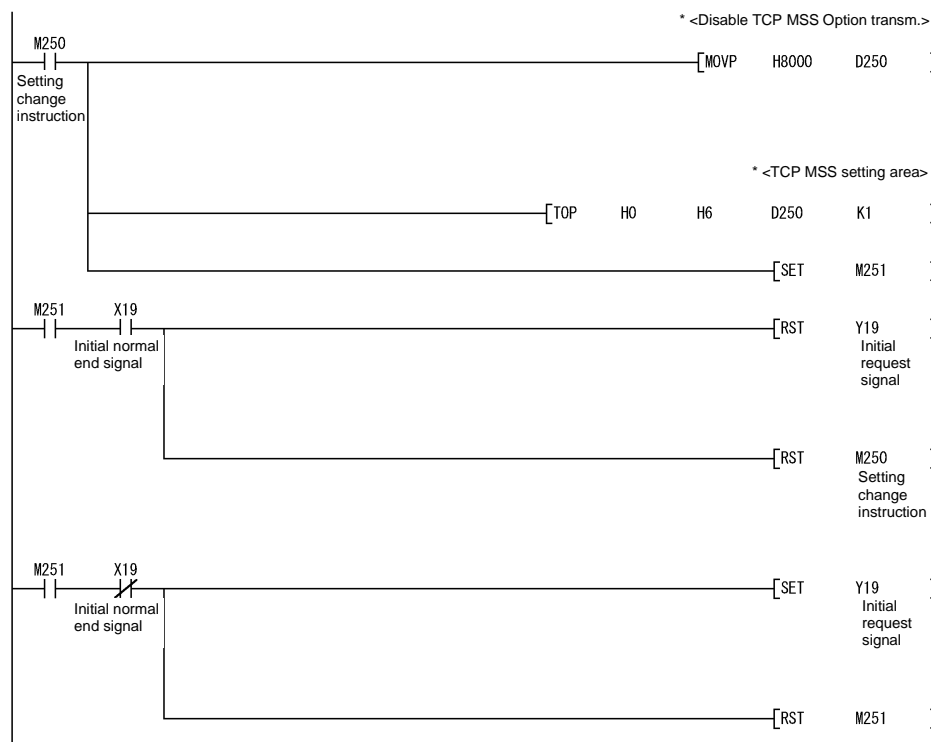**[Title]** Ethernet Interface Module   **[Date of Issue]** Sep., '03
     Changes to Specifications of TCP Maximum Segment Size Option Transmission
     (Revised)

[Relevant Models] QJ71E71-100, QJ71E71-B5, QJ71E71-B2, AJ71QE71N-T,
     AJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-T, A1SJ71QE71N-B5,
     A1SJ71QE71N-B2, AJ71E71N-T, AJ71E71N-B5, AJ71E71N-B2,
     A1SJ71E71N-T, A1SJ71E71N-B5, A1SJ71E71N-B2

2) MELSEC-A series sample program
   The following is a sample program for changing to disable the TCP Maximum Segment transmission setting.

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[Title] Ethernet Interface Module   **[Date of Issue]** Sep., '03
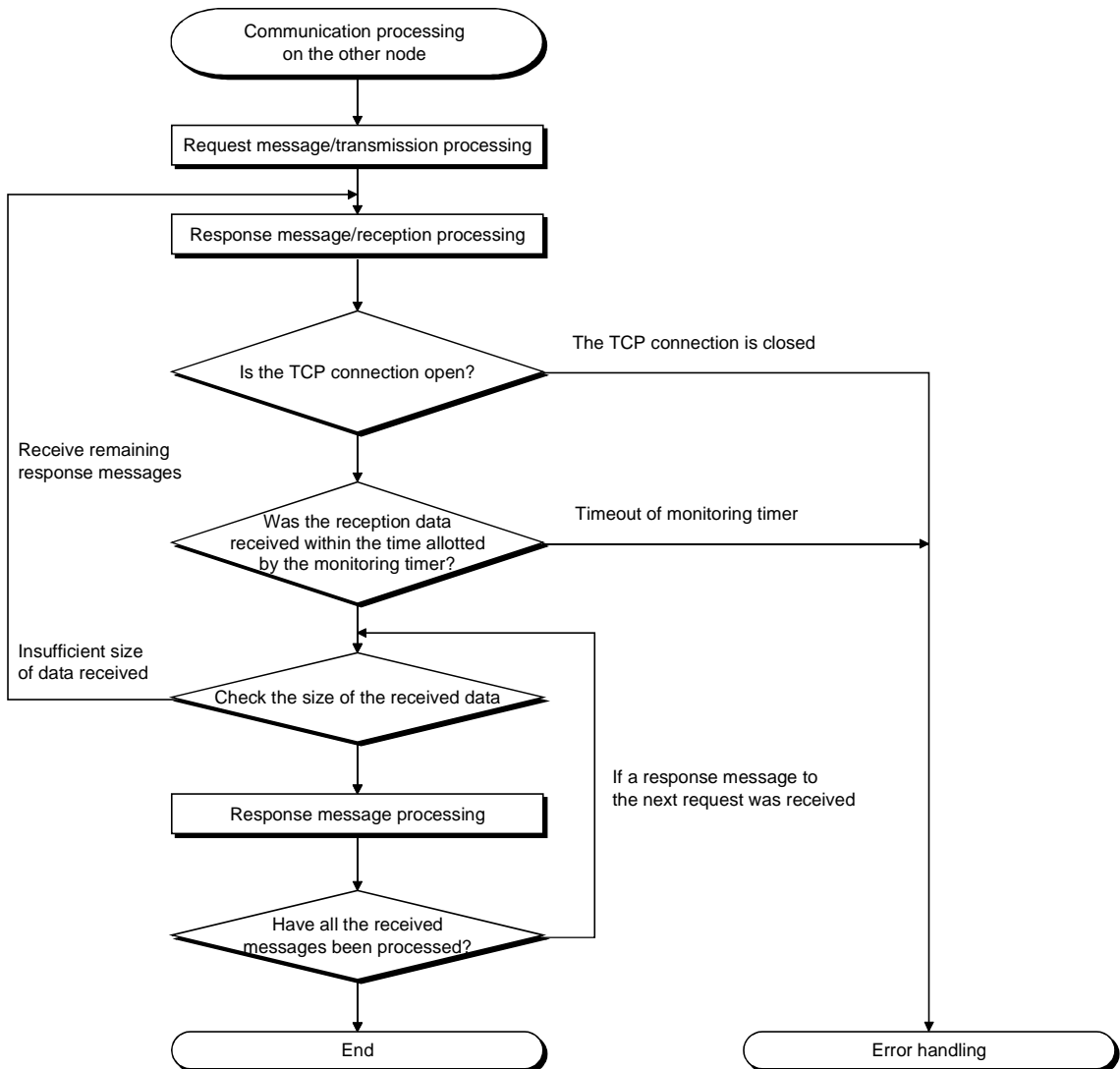   Changes to Specifications of TCP Maximum Segment Size Option Transmission
          (Revised)

[Relevant Models] QJ71E71-100, QJ71E71-B5, QJ71E71-B2, AJ71QE71N-T,
                       AJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-T, A1SJ71QE71N-B5,
                       A1SJ71QE71N-B2, AJ71E71N-T, AJ71E71N-B5, AJ71E71N-B2,
                       A1SJ71E71N-T, A1SJ71E71N-B5, A1SJ71E71N-B2

4. Reception processing on the Transmission Target End (Precautions)

When "Enable TCP Maximum Segment Size Option transmission" is set, the transmission target end (node) program must be as explained in the following Section (a).

(a) Program processing on the transmission target end (node)
    The following is required.

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Changes to Specifications of TCP Maximum Segment Size Option Transmission
(Revised)
[Relevant Models] QJ71E71-100, QJ71E71-B5, QJ71E71-B2, AJ71QE71N-T,
AJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-T, A1SJ71QE71N-B5,
A1SJ71QE71N-B2, AJ71E71N-T, AJ71E71N-B5, AJ71E71N-B2,
A1SJ71E71N-T, A1SJ71E71N-B5, A1SJ71E71N-B2

Background

For Ethernet communications, the TCP socket functions are used inside the personal computer. However, these functions do not have any limits. Therefore, when the "send" function is executed once to transmit data, the receiving end (node) needs to execute the "recv" function once or more in order to read the data ("send" and "recv" is not proportional to 1:1 execution). For this reason, the receiving procedure explained in section 4 (a), is required.

(b) When the transmission target does not support the receive processing flow chart shown in section 4 (a).
If the transmission target does not support the receive processing shown in Section 4 (a), the following results will occur when communicating with the "TCP Maximum Segment Size Option transmission" is set to enable.
• Incorrect data read, when batch read is executed from the transmission target using MC protocol.
• Incorrect data read, after replacing the Ethernet module (which does not support the TCP Maximum Segment Size Option transmission function) with the alternative module supporting the function.
• Data is not received, even though the value of "Number of packet reception" area (Address: $1B8_H$, $1B9_H$) in the buffer memory was changed.
If this occurs, change the setting "TCP Maximum Segment Size Option transmission" setting to disable

5. Notes on using together with products from the MELSOFT series
(a) MELSOFT series products supporting the TCP Maximum Segment transmission function
For setting the "Enable TCP Maximum Segment Size Option transmission", use the following MELSOFT products.

GX Developer	: Version8.07H or later
MX Component	: Version3.03D or later
MX Links	: Version3.08J or later

(b) MELSOFT series products not listed above (a)
When using a MELSOFT product that is not listed above (a) to make communication via Ethernet, set it to "Disable TCP Maximum Segment Size Option transmission" or use UDP/IP type communication.
Otherwise, the sequence program may not function correctly (read/write is incorrect).

6. Initial value of TCP Maximum Segment transmission
In the QJ71E71-100, QJ71E71-B5, QJ71E71-B2 with the first 5 digits of serial No. 05051 to 05081, the default value is preset to "Enable TCP Maximum Segment Size Option transmission". If normal communication cannot occur due to incorrect combination with the other node, change the setting to "Disable TCP Maximum Segment Size Option transmission".