

## Connecting GT21C to Omron CJ1M controller

Make cable (PLC side is male DB9, GT side fly leads - they go to terminal strip on back of GT):

SYSMAC CJ1 series

| CPU                           | Link I/F                           | Wiring diagram  |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
|-------------------------------|------------------------------------|---|---------|-------------|---|----|---|----|---|----|---|----|---|----|---|--|---|--|---|--|---|----|---------|-------------|---|---|---|---|---|------------|---|----|---|----|---|----|---|----|---|----|
| <p>CJ1H<br/>CJ1M<br/>CJ1G</p> | <p>RS232C port on the CPU unit</p> | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Omron PLC side<br/>D-sub 9-pin</p> <table border="1" style="border-collapse: collapse; font-size: 8px;"> <thead> <tr> <th>Pin No.</th> <th>Signal name</th> </tr> </thead> <tbody> <tr><td>1</td><td>FG</td></tr> <tr><td>2</td><td>SD</td></tr> <tr><td>3</td><td>RD</td></tr> <tr><td>4</td><td>RS</td></tr> <tr><td>5</td><td>CS</td></tr> <tr><td>6</td><td></td></tr> <tr><td>7</td><td></td></tr> <tr><td>8</td><td></td></tr> <tr><td>9</td><td>SG</td></tr> </tbody> </table> </div> <div style="text-align: center;"> <p>To power supply</p> </div> <div style="text-align: center;"> <p>GT main unit side</p> <table border="1" style="border-collapse: collapse; font-size: 8px;"> <thead> <tr> <th>Pin No.</th> <th>Signal Name</th> </tr> </thead> <tbody> <tr><td>1</td><td>+</td></tr> <tr><td>2</td><td>-</td></tr> <tr><td>3</td><td>NC (or FG)</td></tr> <tr><td>4</td><td>SD</td></tr> <tr><td>5</td><td>RD</td></tr> <tr><td>6</td><td>NC</td></tr> <tr><td>7</td><td>NC</td></tr> <tr><td>8</td><td>SG</td></tr> </tbody> </table> </div> </div> | Pin No. | Signal name | 1 | FG | 2 | SD | 3 | RD | 4 | RS | 5 | CS | 6 |  | 7 |  | 8 |  | 9 | SG | Pin No. | Signal Name | 1 | + | 2 | - | 3 | NC (or FG) | 4 | SD | 5 | RD | 6 | NC | 7 | NC | 8 | SG |
| Pin No.                       | Signal name                        |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 1                             | FG                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 2                             | SD                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 3                             | RD                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 4                             | RS                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 5                             | CS                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 6                             |                                    |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 7                             |                                    |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 8                             |                                    |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 9                             | SG                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| Pin No.                       | Signal Name                        |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 1                             | +                                  |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 2                             | -                                  |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 3                             | NC (or FG)                         |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 4                             | SD                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 5                             | RD                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 6                             | NC                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 7                             | NC                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |
| 8                             | SG                                 |   |         |             |   |    |   |    |   |    |   |    |   |    |   |  |   |  |   |  |   |    |         |             |   |   |   |   |   |            |   |    |   |    |   |    |   |    |   |    |

Ensure GT is configured for proper Omron PLC (in this case Omron CJ1M) and setup port config

|             |   |
|-------------|---|
| baud rate   | 19200   |
| data length | 7 bit   |
| stop        | 1bit (can't be changed on GT side so PLC port must also use 1-stop bit) |
| Parity      | Even  |
| PLC unit    | 0   |

**GT Configuration - Card-Cut.IOP**

Setup 1 | Hold Device Value | Recipe | Alarm History | Line Graph

Basic Setup | **Communication Parameters** | Auto-Paging | Start-up Screen

PLC Unit No. (0 - 31) 0

COM Port (Connected to PLC/External Device)

Baud Rate 19200 bps

Data Length 7 bit

Stop Bits 1 bit

Parity Bit even

Communication Error Handling

Retry 3 times 4 seconds

Display Error Codes On (Unhold)

Transmission Delay 0 ms

TOOL Port (Connected to GTWIN)

Baud Rate 115200 bps

Data Length 8 bit

Stop Bits 1 bit

Parity Bit odd

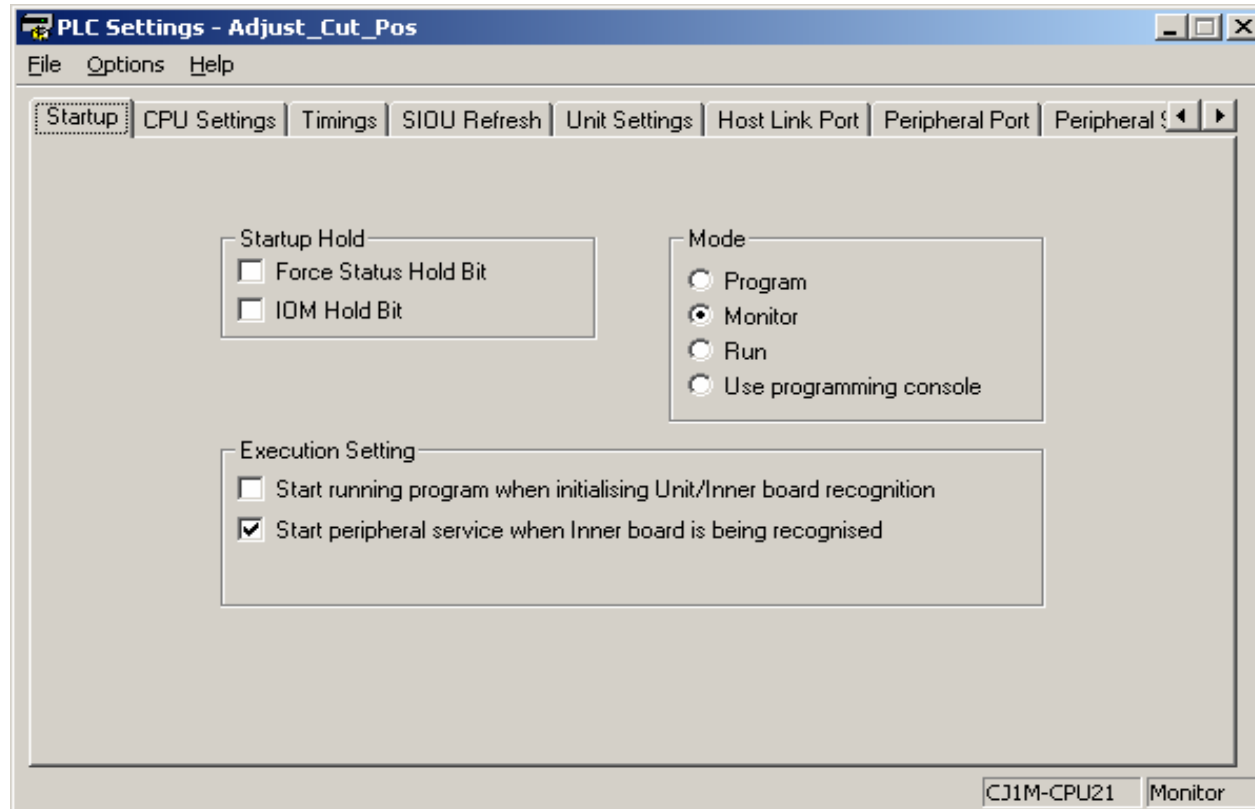
OK

Cancel

Initialize

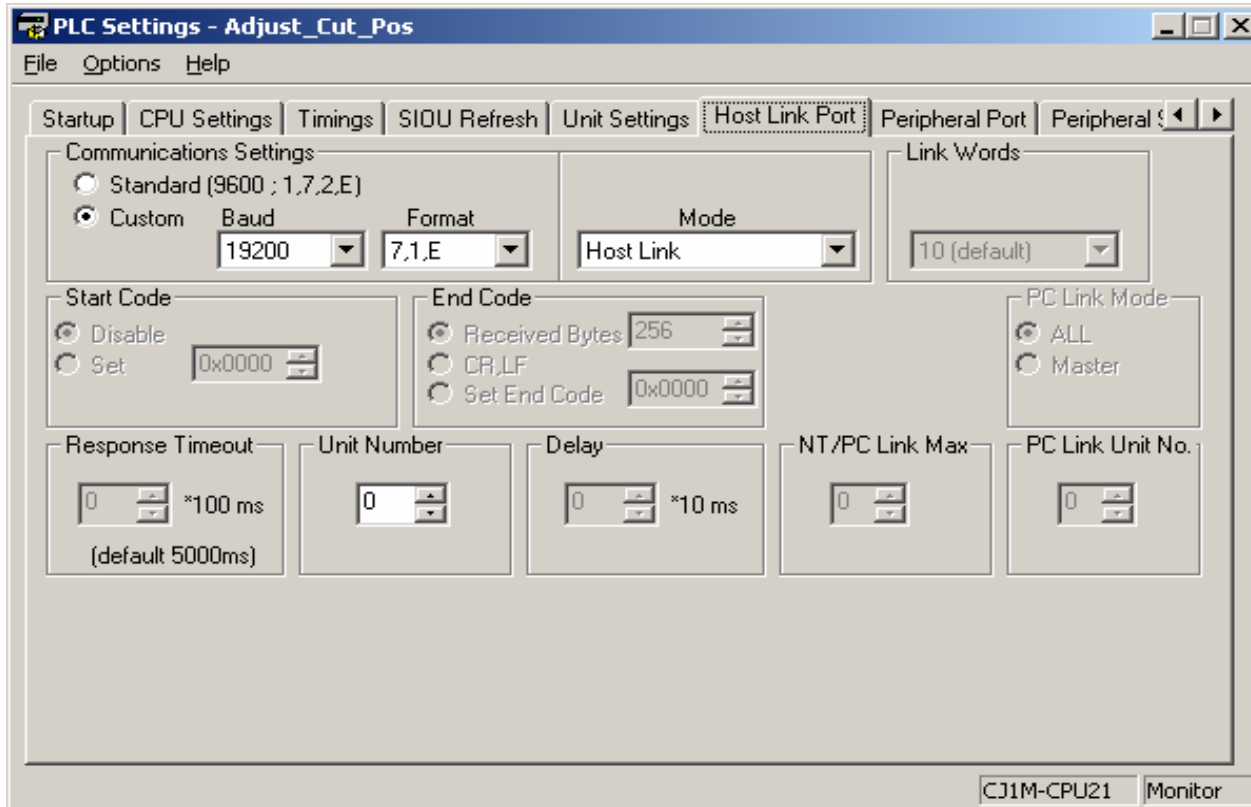
Make sure port configuration is not forced to default (setup CPU switches to OFF Position)

GT help file suggests to make sure selected PLC mode is "Monitor". My GT did work but I wasn't sure why would this affect HMI communication so I tried other settings like Run and Program and connection was still ok. in Programming mode CPU was stopped of course so I had to change values by hand to see the changes on the HMI, but ultimately, when PLC was restarted, GT displayed ER01. Changing mode back to Monitor fixed the problem.



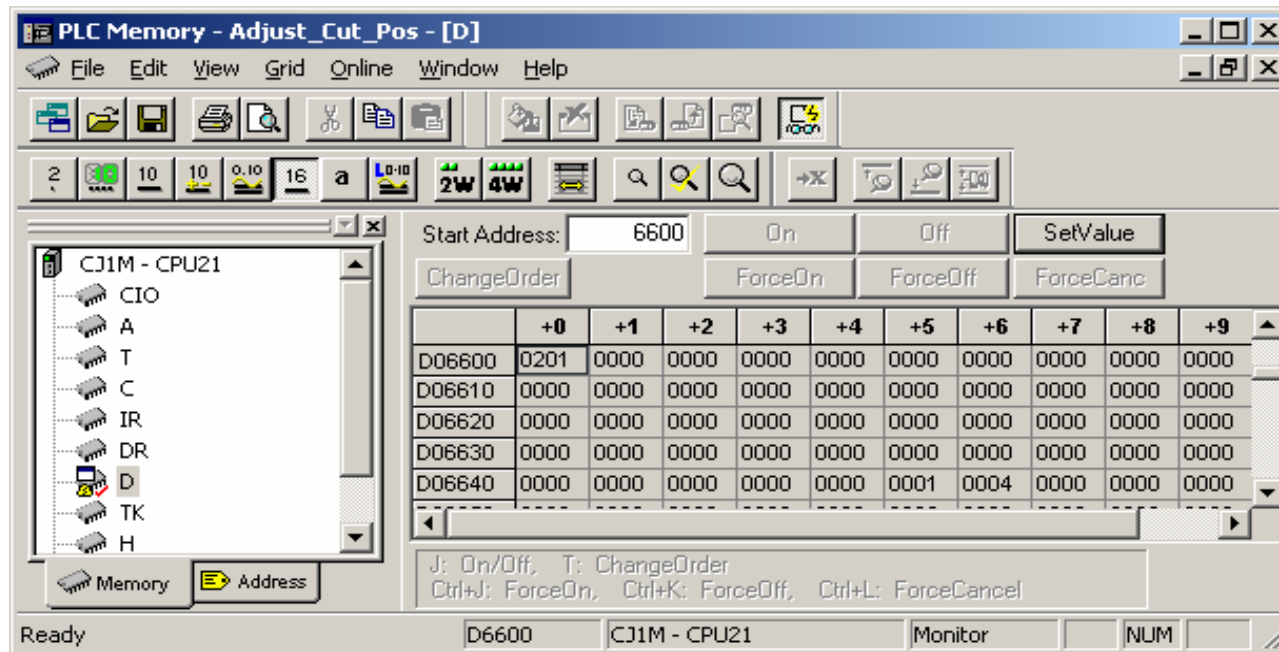
Specify Port Settings for RS232 in the Host Link Setup:

Baud Rate: 19200  
Format 7,1,E  
Mode Host Link  
Unit Number 0



Verify port setting (if needed assign values by hand):

D6600            0x0201  
D6645            0x0001  
D6646            0x0004



Restart PLC to make sure settings are initialized