PEERLINK FUNCTION FOR ECOM100 MODULE

In This Appendix...

Peerlink Function for ECOM100

Q. How is the Peerlink function used on the ECOM100?

A. As of the following versions of ECOM100 firmware, a peerlink function was added.

- H0-ECOM100 v4.0.334
- H2-ECOM100 v4.0.1808
- H4-ECOM100 v4.0.1808

The peerlink function allows the ECOM100 to join a data-sharing network on which 16 data blocks of 16 words each are automatically shared between the network devices without having to manage the communication with ladder logic. Each member of the data-sharing network receives data from (subscribe), and optionally sends data to (publish), all of the other members automatically. Members of that data-sharing network can include:

- DL05 via H0-ECOM100
- DL06 via H0-ECOM100
- DL205 via H2-ECOM100
- DL405 via H4-ECOM100

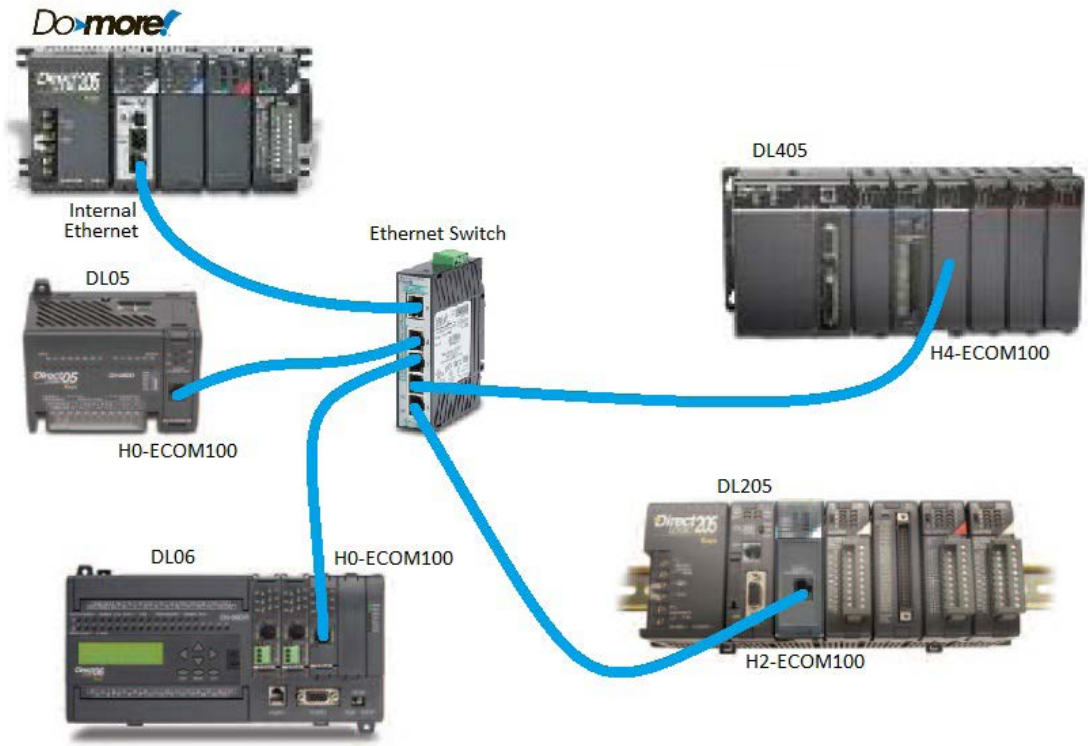
Do-more CPU (via built-in Ethernet port) or with an installed H2-ECOM100

- If Do-more built-in Ethernet port is used, then peerlink function is done with a PEERLINK instruction (i.e. no configuration necessary)
- If an H2-ECOM100 is used in a Do-more base, then H2-ECOM100 must be configured, and the blocks would be mapped to the Do-more DLV memory. The PEERLINK instruction, in this case, would not be used.

Once configured and enabled, the ECOM100 uses TCP/IP broadcast packets to publish the blocks of data to the network at a fixed rate of once every 100ms. Since broadcast packets are used, the scope of the data-sharing network is limited to the local broadcast domain.

The peerlink data-sharing network is limited to 16 publishing nodes but an unlimited amount of subscribing nodes. A data-sharing network could look like the graphic below.

Peerlink Data-Sharing Network



Configuration

There are two ways to configure/edit the peerlink function in an ECOM100 (Do-more CPU utilizing the built-in Ethernet port do not require any configuration):

- Start NetEdit3:
  1. Right-click on your ECOM100
  2. Select “Advanced...”
  3. Check “Enable Web Server”
  4. Press <OK> button
  5. Right-click on your ECOM100 (again)
  6. Select “Start Web based config....” --> This pulls up the configuration in your Internet browser
  7. Click on “Peerlink Settings”
- If ECOM100’s Web Server is already enabled: Start your Internet browser
  1. In the address bar, enter your ECOM100’s IP address--> This pulls up the configuration.
  2. Click on “Peerlink Settings”.

The Peerlink Settings screen looks like this:

Peerlink Settings

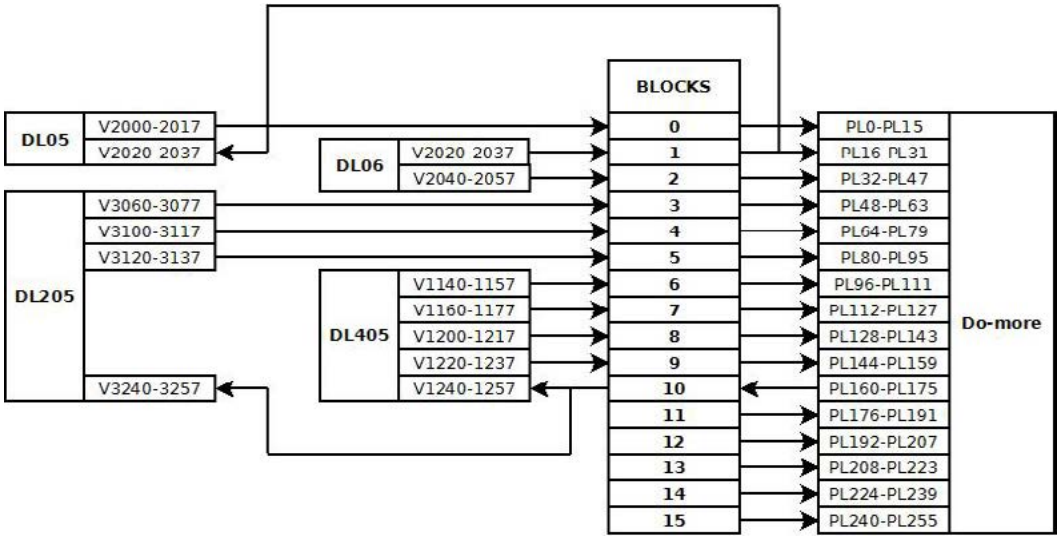
V Memory Address (octal):	3000	
☑ Peerlink Enabled		
Block Number 0	○ Ignore ◉ Publish ○ Subscribe	V3000-V3017
Block Number 1	○ Ignore ○ Publish ◉ Subscribe	V3020-V3037
Block Number 2	○ Ignore ○ Publish ◉ Subscribe	V3040-V3057
Block Number 3	○ Ignore ○ Publish ◉ Subscribe	V3060-V3077
Block Number 4	◉ Ignore ○ Publish ○ Subscribe	V3100-V3117
Block Number 5	◉ Ignore ○ Publish ○ Subscribe	V3120-V3137
Block Number 6	◉ Ignore ○ Publish ○ Subscribe	V3140-V3157
Block Number 7	◉ Ignore ○ Publish ○ Subscribe	V3160-V3177
Block Number 8	○ Ignore ○ Publish ◉ Subscribe	V3200-V3217
Block Number 9	◉ Ignore ○ Publish ○ Subscribe	V3220-V3237
Block Number 10	◉ Ignore ○ Publish ○ Subscribe	V3240-V3257
Block Number 11	◉ Ignore ○ Publish ○ Subscribe	V3260-V3277
Block Number 12	◉ Ignore ○ Publish ○ Subscribe	V3300-V3317
Block Number 13	◉ Ignore ○ Publish ○ Subscribe	V3320-V3337
Block Number 14	◉ Ignore ○ Publish ○ Subscribe	V3340-V3357
Block Number 15	◉ Ignore ○ Publish ○ Subscribe	V3360-V3377

Back Send Reset

Parameters:

- V Memory Address (octal): Enter the starting V-memory address of the first block. All 16 blocks of 16 words each will be allocated. In the above example notice V3000-3377 are now utilized.
- Peerlink Enabled: For the Peerlink function to work this box must be checked. If it is unchecked, no data exchange with the other nodes on the data-sharing network will occur.
- Block Number x / Ignore: If this option is selected then that particular block is not published onto the network, nor is it subscribed to. Thus the V-memory block is left unchanged.
- Block Number x / Publish: If this option is selected then that particular block is published onto the network for others to subscribe to.
- Block Number x / Subscribe: If this option is selected then that particular block is subscribed to.
- <Back> button: Return to the main ECOM100 configuration screen.
- <Send> button: Write the Peerlink configuration on this screen to the ECOM100.
- <Reset> button: Reset all parameters on this screen back to factory default.

After configuration the automatic data exchange could look like this:



Following is a description of each CPU system configuration function.

DL05

This configuration causes the H0-ECOM100 to:

- Take whatever data is in the DL05's V2000-2017 and write (publish) it as Block Number 0.
- Read (subscribe) to whatever data gets written to Block Number 1 and store it in the DL05's V2020-2037.
- Leave all remaining blocks (Block Numbers 2-15) unchanged (ignored).

Peerlink Settings

V Memory Address (octal):	2000	
☑ Peerlink Enabled		
Block Number 0	○ Ignore ◉ Publish ○ Subscribe	V2000-V2017
Block Number 1	○ Ignore ○ Publish ◉ Subscribe	V2020-V2037
Block Number 2	◉ Ignore ○ Publish ○ Subscribe	V2040-V2057
Block Number 3	◉ Ignore ○ Publish ○ Subscribe	V2060-V2077
Block Number 4	◉ Ignore ○ Publish ○ Subscribe	V2100-V2117
Block Number 5	◉ Ignore ○ Publish ○ Subscribe	V2120-V2137
Block Number 6	◉ Ignore ○ Publish ○ Subscribe	V2140-V2157
Block Number 7	◉ Ignore ○ Publish ○ Subscribe	V2160-V2177
Block Number 8	◉ Ignore ○ Publish ○ Subscribe	V2200-V2217
Block Number 9	◉ Ignore ○ Publish ○ Subscribe	V2220-V2237
Block Number 10	◉ Ignore ○ Publish ○ Subscribe	V2240-V2257
Block Number 11	◉ Ignore ○ Publish ○ Subscribe	V2260-V2277
Block Number 12	◉ Ignore ○ Publish ○ Subscribe	V2300-V2317
Block Number 13	◉ Ignore ○ Publish ○ Subscribe	V2320-V2337
Block Number 14	◉ Ignore ○ Publish ○ Subscribe	V2340-V2357
Block Number 15	◉ Ignore ○ Publish ○ Subscribe	V2360-V2377

DL06

This configuration causes the H0-ECOM100 to:

- Take whatever data is in the DL06's V2020-2037 and write (publish) it as Block Number 1.
- Take whatever data is in the DL06's V2040-2057 and write (publish) it as Block Number 2.
- Leave all remaining blocks (Block Numbers 0,3-15) unchanged (ignored).

Peerlink Settings

V Memory Address (octal):	2000	
	☑ Peerlink Enabled	
Block Number 0	◉ Ignore ○ Publish ○ Subscribe	V2000-V2017
Block Number 1	○ Ignore ◉ Publish ○ Subscribe	V2020-V2037
Block Number 2	○ Ignore ◉ Publish ○ Subscribe	V2040-V2057
Block Number 3	◉ Ignore ○ Publish ○ Subscribe	V2060-V2077
Block Number 4	◉ Ignore ○ Publish ○ Subscribe	V2100-V2117
Block Number 5	◉ Ignore ○ Publish ○ Subscribe	V2120-V2137
Block Number 6	◉ Ignore ○ Publish ○ Subscribe	V2140-V2157
Block Number 7	◉ Ignore ○ Publish ○ Subscribe	V2160-V2177
Block Number 8	◉ Ignore ○ Publish ○ Subscribe	V2200-V2217
Block Number 9	◉ Ignore ○ Publish ○ Subscribe	V2220-V2237
Block Number 10	◉ Ignore ○ Publish ○ Subscribe	V2240-V2257
Block Number 11	◉ Ignore ○ Publish ○ Subscribe	V2260-V2277
Block Number 12	◉ Ignore ○ Publish ○ Subscribe	V2300-V2317
Block Number 13	◉ Ignore ○ Publish ○ Subscribe	V2320-V2337
Block Number 14	◉ Ignore ○ Publish ○ Subscribe	V2340-V2357
Block Number 15	◉ Ignore ○ Publish ○ Subscribe	V2360-V2377

DL205

This configuration causes the H2-ECOM100 to:

- Take whatever data is in the DL205's V3060-3077 and write (publish) it as Block Number 3.
- Take whatever data is in the DL205's V3100-3117 and write (publish) it as Block Number 4.
- Take whatever data is in the DL205's V3120-3137 and write (publish) it as Block Number 5.
- Read (subscribe) to whatever data gets written to Block Number 10 and store it in the DL205's V3240-3257.
- Leave all remaining blocks (Block Numbers 0-2,6-9,11-15) unchanged (ignored).

Peerlink Settings

V Memory Address (octal):	3000	
	☑ Peerlink Enabled	
Block Number 0	◉ Ignore ○ Publish ○ Subscribe	V3000-V3017
Block Number 1	◉ Ignore ○ Publish ○ Subscribe	V3020-V3037
Block Number 2	◉ Ignore ○ Publish ○ Subscribe	V3040-V3057
Block Number 3	○ Ignore ◉ Publish ○ Subscribe	V3060-V3077
Block Number 4	○ Ignore ◉ Publish ○ Subscribe	V3100-V3117
Block Number 5	○ Ignore ◉ Publish ○ Subscribe	V3120-V3137
Block Number 6	◉ Ignore ○ Publish ○ Subscribe	V3140-V3157
Block Number 7	◉ Ignore ○ Publish ○ Subscribe	V3160-V3177
Block Number 8	◉ Ignore ○ Publish ○ Subscribe	V3200-V3217
Block Number 9	◉ Ignore ○ Publish ○ Subscribe	V3220-V3237
Block Number 10	○ Ignore ○ Publish ◉ Subscribe	V3240-V3257
Block Number 11	◉ Ignore ○ Publish ○ Subscribe	V3260-V3277
Block Number 12	◉ Ignore ○ Publish ○ Subscribe	V3300-V3317
Block Number 13	◉ Ignore ○ Publish ○ Subscribe	V3320-V3337
Block Number 14	◉ Ignore ○ Publish ○ Subscribe	V3340-V3357
Block Number 15	◉ Ignore ○ Publish ○ Subscribe	V3360-V3377

DL405

This configuration causes the H4-ECOM100 to:

- Take whatever data is in the DL405's V1140-1157 and write (publish) it as Block Number 6.
- Take whatever data is in the DL405's V1160-1177 and write (publish) it as Block Number 7.
- Take whatever data is in the DL405's V1200-1217 and write (publish) it as Block Number 8.
- Take whatever data is in the DL405's V1220-1237 and write (publish) it as Block Number 9.
- Read (subscribe) to whatever data gets written to Block Number 10 and store it in the DL405's V1240-1257.
- Leave all remaining blocks (Block Numbers 0-5,11-15) unchanged (ignored).

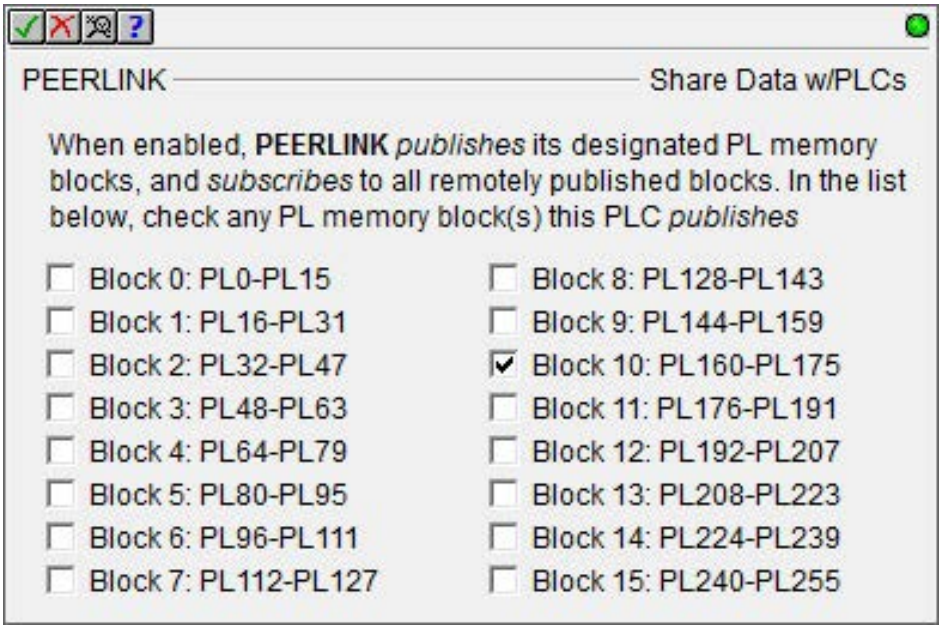
Peerlink Settings

V Memory Address (octal):	1000	
	☑ Peerlink Enabled	
Block Number 0	◉ Ignore ○ Publish ○ Subscribe	V1000-V1017
Block Number 1	◉ Ignore ○ Publish ○ Subscribe	V1020-V1037
Block Number 2	◉ Ignore ○ Publish ○ Subscribe	V1040-V1057
Block Number 3	◉ Ignore ○ Publish ○ Subscribe	V1060-V1077
Block Number 4	◉ Ignore ○ Publish ○ Subscribe	V1100-V1117
Block Number 5	◉ Ignore ○ Publish ○ Subscribe	V1120-V1137
Block Number 6	○ Ignore ◉ Publish ○ Subscribe	V1140-V1157
Block Number 7	○ Ignore ◉ Publish ○ Subscribe	V1160-V1177
Block Number 8	○ Ignore ◉ Publish ○ Subscribe	V1200-V1217
Block Number 9	○ Ignore ◉ Publish ○ Subscribe	V1220-V1237
Block Number 10	○ Ignore ○ Publish ◉ Subscribe	V1240-V1257
Block Number 11	◉ Ignore ○ Publish ○ Subscribe	V1260-V1277
Block Number 12	◉ Ignore ○ Publish ○ Subscribe	V1300-V1317
Block Number 13	◉ Ignore ○ Publish ○ Subscribe	V1320-V1337
Block Number 14	◉ Ignore ○ Publish ○ Subscribe	V1340-V1357
Block Number 15	◉ Ignore ○ Publish ○ Subscribe	V1360-V1377

Do-more

This configuration causes the Do-more on-board Ethernet port to:

- Take whatever data is in the Do-more's PL160-175 and write (publish) it as Block Number 10.
- Read (subscribe) to all block data. The Do-more has specially allocated memory (PL = Peerlink memory) and cannot be configured to ignore any blocks as is indicated in the text of the PEERLINK instruction itself.
- Ignore (inhibit) updates to blocks it subscribes to via a runtime level control (e.g. PL.B0Inh, PL.B1Inh, etc. bits).



NOTE: *For more information on how to do Peerlink in Do-more, please see the Do-more Designer Help file under the PEERLINK instruction.*

Block Summary

Thus from a block data-sharing point of view, each block will contain data as shown in the following list. Any number of ECOM100s (or Do-more's) on the network can listen (subscribe) to any of this data. The important thing to remember is that only one PLC can write (publish) a particular block; otherwise, there would be a conflict. Thus there can be any number of subscribers, but only 16 publishers per Peerlink data-sharing network.

Block Number 0: DL05's V2000-2017

Block Number 1: DL06's V2020-2037

Block Number 2: DL06's V2040-2057

Block Number 3: DL205's V3060-3077

Block Number 4: DL205's V3100-3117

Block Number 5: DL205's V3120-3137

Block Number 6: DL405's V1140-1157

Block Number 7: DL405's V1160-1177

Block Number 8: DL405's V1200-1217

Block Number 9: DL405's V1220-1237

Block Number 10: Do-more's PL160-175

Block Number 11: <zeros>

Block Number 12: <zeros>

Block Number 13: <zeros>

Block Number 14: <zeros>

Block Number 15: <zeros>