

Application Note

Using AN-X2-DHP to Route Messages from a SLC-5/04



This application note describes how to send remote messages from a SLC-5/04 on Data Highway Plus over Ethernet to a destination station, using the routing function on the AN-X2-DHP.

It requires version 4.7 or above of the AN-X2-DHP firmware.

In this example, the AN-X is at node address 37 octal on Data Highway Plus and the SLC is at node address 01 octal. The AN-X has IP address 192.168.1.12.

To send remote messages from a SLC-5/04:

1. Configure the AN-X router
2. Enable pass thru on the SLC
3. Create remote messages on the SLC

AN-X Router Configuration

In this example, AN-X is assigned local Link ID 121.

The SLC is sending remote messages to:

- read 100 integers from a ControlLogix processor in slot 1 of a rack that contains a 1756-ENBT at IP address 192.168.1.65, using link ID 1
- read 20 integers from an Ethernet/IP enabled PLC-5 at IP address 192.168.1.14, using link ID 2

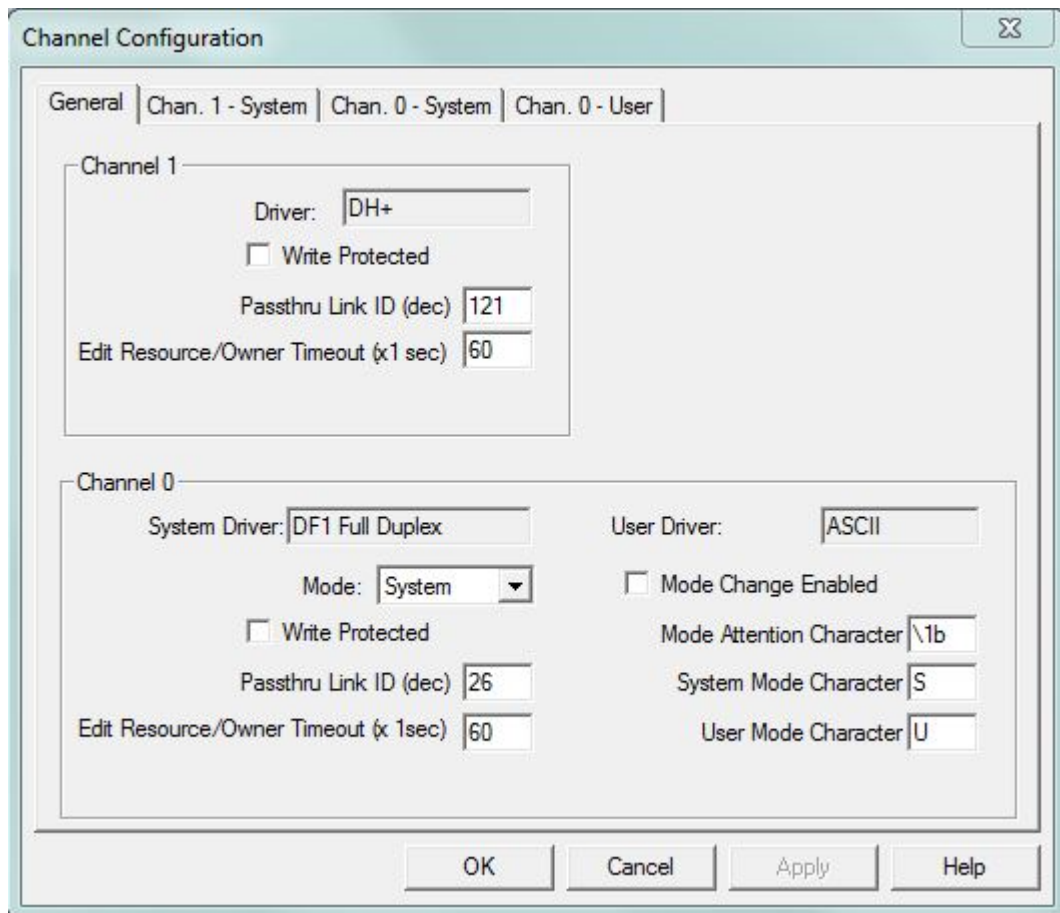
The AN-X router configuration file looks like this:

```
LocalLinkID 121
1 Eth 192.168.1.65 Slot 1 CLX
2 Eth 192.168.1.14 PLC
```

Pass Thru on the SLC

The Data Highway Plus channel on the SLC must be configured to accept replies to remote messages.

1. In the Project tree, right click on *Controller/Channel Configuration* and select *Open*.
2. Select the *General* tab.
3. In the Channel 1 area, enter the AN-X Local Link ID (121) in the Passthru Link ID (dec) box.



4. Click OK.

Preparing the ControlLogix

You must configure a mapping table in the ControlLogix to allow the controller to accept messages from controllers that cannot access ControlLogix tags directly.

In RSLogix 5000:

1. Select Logic/Map PLC Messages
2. In the File number column of the table, enter the file number you want to map to a tag. For example, to map a tag to N7, enter 7.
3. In the Name column of the table, enter the name of the tag you want to map to that file number.
4. Click OK

SLC Remote Messages

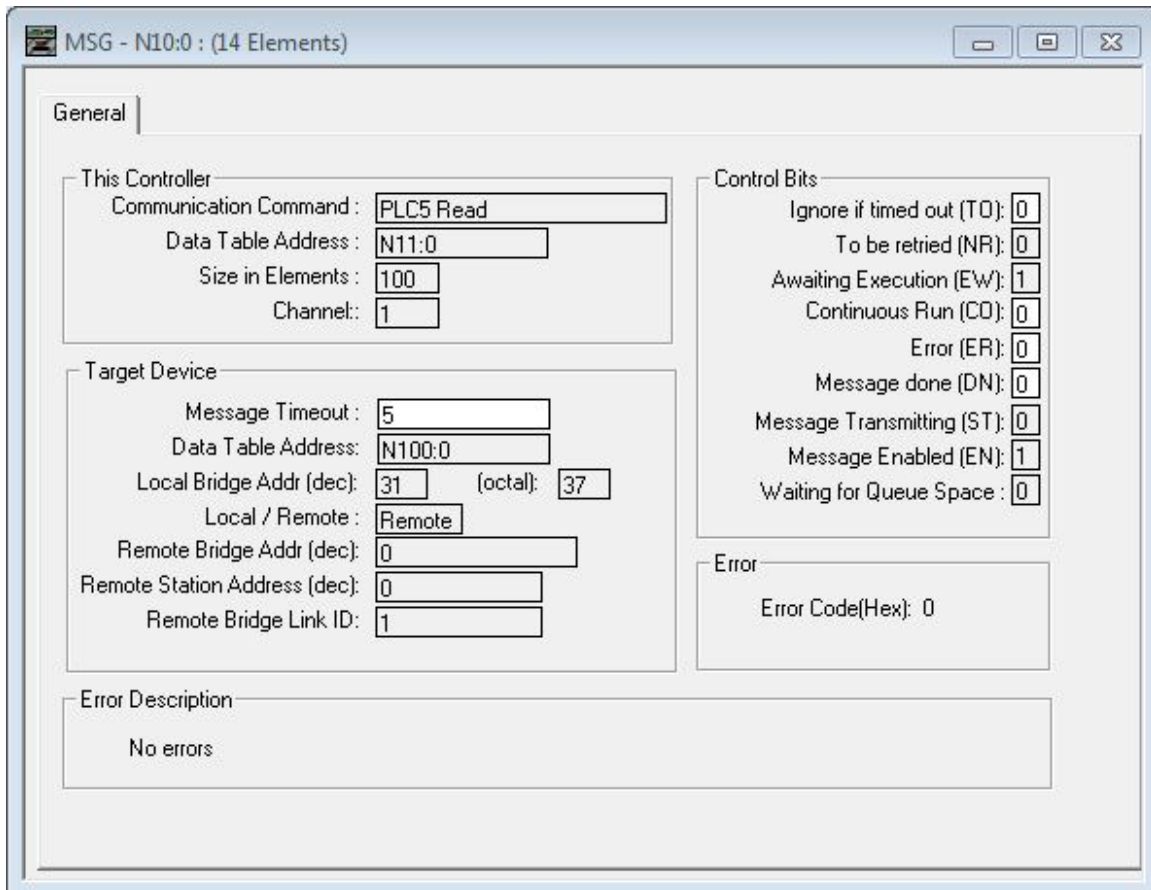
1. Edit the SLC program offline.
2. Add a MSG instruction to the SLC program, along with any required logic to control it.
3. Set Read/Write to the appropriate value.
4. Set the Target Device to the correct type, depending on the target device. In this example, select PLC5, since the SLC is reading from emulated PLC-5 files in the ControlLogix.
5. Set Local/Remote to Remote.
6. Assign an address for the Control Block.
7. Double click on Setup Screen to configure the message.

In the *This Controller* area:

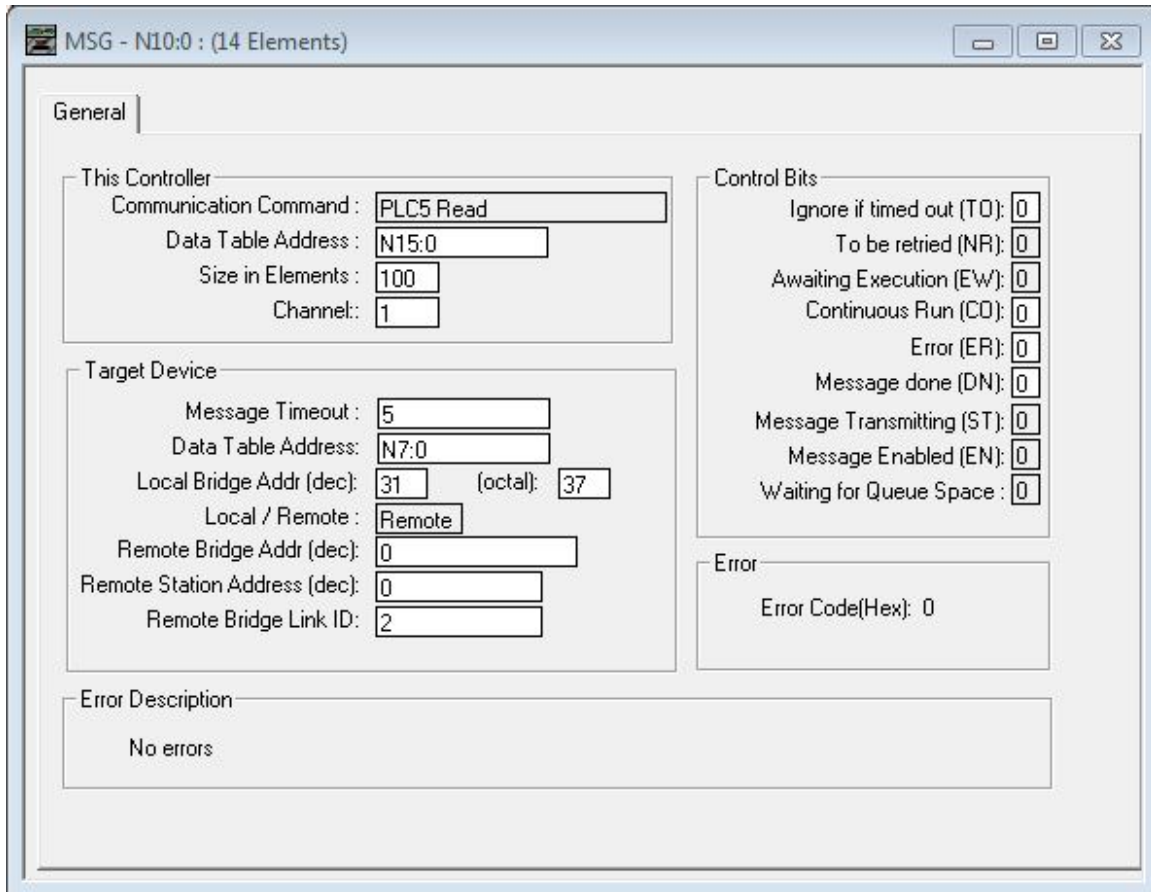
1. Select an appropriate Communication Command
2. Set the Data Table Address associated with the data we are sending or receiving. In this example, we are storing the data read at N11:0 on the SLC.
3. Set the Size in Elements (the number of words to read or write). In this example, we are reading 100 words.
4. Set the Channel to match the Data Highway Plus channel on the SLC.

In the *Target Device* area:

1. Set an appropriate timeout or accept the default.
2. Enter the Data Table Address in the destination device. In this example, the data in the ControlLogix has been mapped to file N100.
3. Set the Local Bridge Address to match the Data Highway Plus address of the AN-X that is routing the message.
4. Set the Remote Bridge Address to 0.
5. Set the Remote Station address to be the Data Highway Plus address of the destination device. This is necessary only if the AN-X is routing the message to another Data Highway Plus network. In the example, leave it as 0.
6. Set the Remote Bridge Link ID to be the Link ID of the routing table entry in the AN-X. In this case, Link ID 1 is the path to the ControlLogix and Link ID 2 is the path to the PLC-5.



To send a message to the PLC-5, using link ID 2, add another MSG instruction, with appropriate parameters and with the Remote Bridge Link ID set to 2.



Local Messages

It's also possible to define a default path in the AN-X router configuration file. This default path uses Link ID 0.

Local messages sent to the DH+ address of the ANX will be routed using the default path.

For example, to send messages to the ControlLogix in the previous example, using the default path, add a line to the router configuration file.

```
LocalLinkID 121
0 Eth 192.168.1.65 Slot 1 CLX
1 Eth 192.168.1.65 Slot 1 CLX
2 Eth 192.168.1.14 PLC
```

Now, add a local message in the SLC program with the destination set to the DH+ address of the AN-X. In this example, the AN-X is using Data Highway Plus address 37 octal.

The screenshot shows a configuration window titled "MSG - N12:0 : (14 Elements)". The window is divided into several sections:

- General** (selected tab)
- This Controller**
 - Communication Command:
 - Data Table Address:
 - Size in Elements:
 - Channel:
- Target Device**
 - Message Timeout:
 - Data Table Address:
 - Local Node Addr (dec): (octal):
 - Local / Remote:
- Control Bits**
 - Ignore if timed out (TO):
 - To be retried (NR):
 - Awaiting Execution (E'W):
 - Continuous Run (CO):
 - Error (ER):
 - Message done (DN):
 - Message Transmitting (ST):
 - Message Enabled (EN):
 - Waiting for Queue Space:
- Error**
 - Error Code(Hex):
- Error Description**
 - No errors



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