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Technical Note

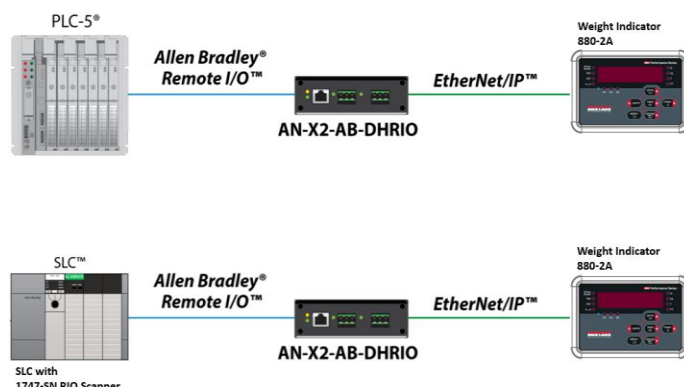


Rice Lake Weighing Systems to RIO with AN-X2-AB-DHRIO

Applicable products include:

- **AN-X2-AB-DHRIO**
Using the Drive firmware
- **AB PLC/5 with RIO Scanner**
- **SLC with 1747-SN RIO Scanner**
- **Rice Lake Weighing Systems**
Weight Indicator 880-2A
With EtherNet/IP option module

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AN-X2-AB-DHRIO with drive firmware

This document describes the procedures to enable a PLC/5 or SLC to communicate with a Rice Lake 880-2A weight indicator over Remote I/O. To utilize existing PLC/5 and SLC's Remote I/O systems, the AN-X2-AB-DHRIO will be used as a Remote I/O adapter that is controlled by the PLC/5 or SLC Remote I/O scanner.

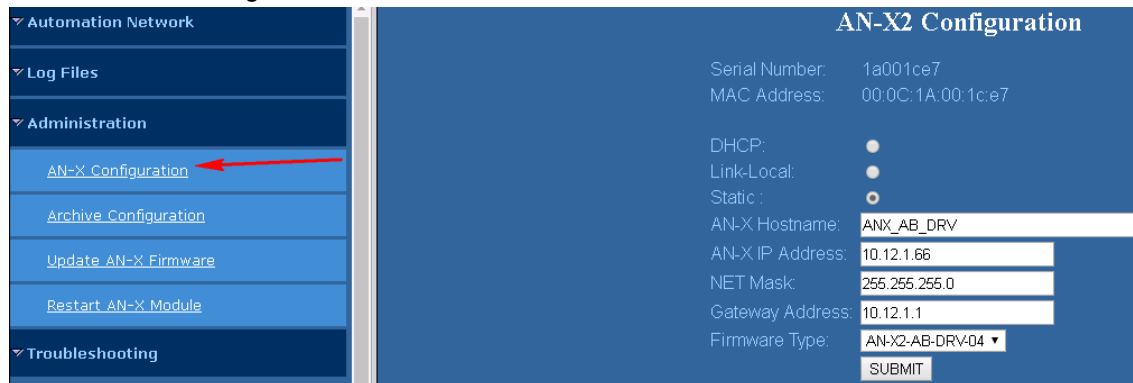
The Rice Lake 880-2A is configured with an EtherNet/IP class 1 server that will be controlled by the AN-X2-AB-DHRIO EtherNet/IP class 1 scanner.

See the Appendix A for a list of reference documents.

1. Configure the AN-X2-AB-DHRIO.

Using your favorite Internet browser, Connect to the AN-X2 webpage. Consult the [DHRIO Drive user manual](#) for instructions on setting the IP address.

Click on AN-X Configuration

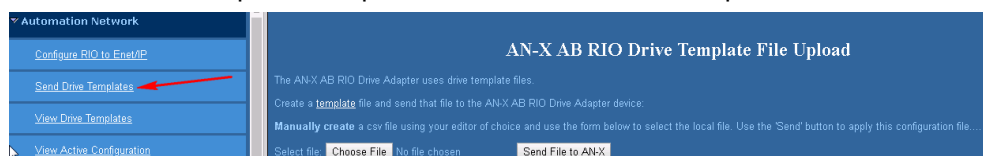


Assign the IP address settings for you're AN-X2.
Select AN-X2-AB-DRV-04 for the Firmware Type.
Click SUBMIT.

Click the Continue button and wait 60 seconds for the firmware to update.



Once the AN-X2 is powered up, click on the Send Drive Templates link.



Send the EthDef file:

****The supplied EthDef_RiceLake_8802A.csv file was constructed from information obtained from the 880_1280_EDS_EIP_Single_Port_V_2_15.eds file. Consult the [TN171005-000 AN-X2-AB-DHRIO RIO to EIP Drives.pdf](#) technote file for information on how to construct or modify the templates.**

Click the Choose File button, and browse for and select the EthDef_RiceLake_8802A.csv file.

Click the Send File to AN-X button. This will transfer the file to the AN-X2 internal storage.

Send the RioDef file:

Click the Choose File button, and browse for and select the RioDef_RiceLake_8802A.csv file.

Click the Send File to AN-X button. This will transfer the file to the AN-X2 internal storage.

Send the MainDef file:

**** Consult the TN171005-000 AN-X2-AB-DHRIO RIO to EIP Drives.pdf technote file for information on how to construct or modify the templates. The supplied AbRio_Main_RiceLake_8802A.csv file configures the AN-X2 as follows:**

Baud: 115k

Rack#: 3, half-rack

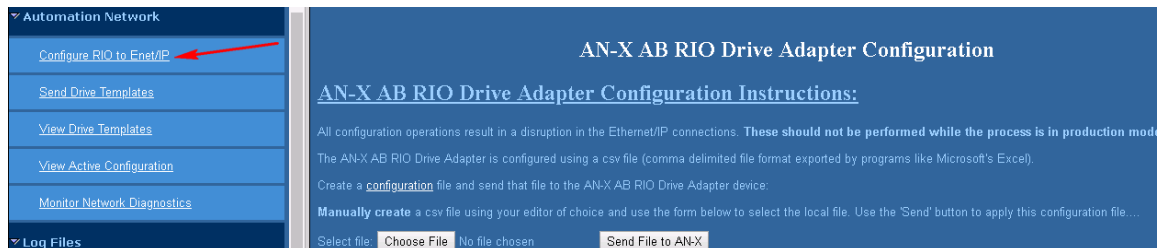
RPI: 100

IP Address of 880-2A EtherNet/IP interface: 10.12.1.55

Click on the Configure RIO to Enet/IP link

Click the Choose File button, and browse for and select the AbRio_Main_RiceLake_8802A.csv file.

Click the Send File to AN-X



The RIO and EtherNet/IP networks use little endian format, while the 880-2A defaults to the big endian format. Several options are available to swap the bytes so the 880-2A and PLC/SLC use the same format. You can swap they bytes in PLC code, swap bytes in AN-X2, or swap the bytes in the 880-2A. In this technote, we'll use the 880-2A to do the byte swapping.

Consult the 880 series user manual for information on how to modify the IP address.

Within the Revolution Scale Software, select you weight indicator model number.

Click on Base Configuration>Fieldbus, and change the Fieldbus Byteswap to "Byte".

Download this change to the weight indicator.

2. Configure the PLC5 or SLC.

The configuration used for this technote is configured as:

Baud: 115k

Rack#: 3, half-rack

RPI: 100

IP Address of 880-2A EtherNet/IP interface: 10.12.1.55

Verify the Main template file matches the configuration of the PLC/SLC.

```
;AN-X-ABRIO-DRV configuration for the Rice Lake Weighing System model 880-2A
Baud 115k ; 57k, 115k or 230k
Rack, 0003, 1, 2 ; Rack Number, Start Quarter, End Quarter
RPI 100 ; RPI for the EtherNet IP connection to the Drive
Template, EthDef_RiceLake_8802A ; link to file that defines drive Ethernet tags
Template, RioDef_RiceLake_8802A ; link to file that maps Ethernet tags to RIO
IpAddr 10.12.1.55 ; Drive IP Address
Unicast
EndRack
```

RSLogix 5 channel properties

Edit Channel Properties

Channel 0 Channel 1A Channel 3A

I/O Channel Mode

☒ Remote I/O Scanner

☐ Remote I/O Adapter

☐ Data Highway Plus (DH+)

☐ Inactive

Diagnostic File: 9

Baud Rate: 115.2 kBaud

☐ Complementary I/O Enabled

Rack	Group	Size	Fault	Inhibit	Reset	Range
3	0	1/2		0	0	030-033

RSLogix 500

RSLogix 500 Pro - AN-X RICELAKE.RSS

File Edit View Search Columns Tools W

OFFLINE No Forces No Edits Forces Disabled Driver: AB_DF1-1 Node: 1c

I/O Configuration

Racks

#	Part #	Description
0	1747-L542A	5/04 CPU - 24K Mem.
1	1747-SN	RIO Scanner
2		
3		
4		
5		
6		

1747-SN G File Configuration

PRIMARY DEVICES

Logical Rack 0

Group 0 Group 2 Group 4 Group 6

Logical Rack 1

Group 0 Group 2 Group 4 Group 6

Logical Rack 2

Group 0 Group 2 Group 4 Group 6

Logical Rack 3

Group 0 ☒ 1/2 Rack Device #1 - IO words 24 + 25

Group 2 " " - IO words 26 + 27

Group 4

Group 6

For the 1747-SN, use the DIP switches to set the network speed.

Once everything is configured correctly, the scale data will be located in the configured Remote I/O I and O files.

For the SLC and 1747-SN the data mapping is listed in the G File Configuration:

Group 0	<input type="checkbox"/>	1/2 Rack	Device #1 - IO words 24 + 25
Logical Rack 3	Group 2	<input type="checkbox"/>	" " - IO words 26 + 27
	Group 4	<input type="checkbox"/>	

Word 24 = Command Number

Word 25 = Status (IN), Parameter (OUT)

Word 26 = MSW

Word 27 = LSW

Data File I1 (dec) -- INPUT			
Offset			
I:1.17	0	1747-SN - RIO Scanner	
I:1.18	0	1747-SN - RIO Scanner	
I:1.19	0	1747-SN - RIO Scanner	
I:1.20	0	1747-SN - RIO Scanner	
I:1.21	0	1747-SN - RIO Scanner	
I:1.22	0	1747-SN - RIO Scanner	
I:1.23	0	1747-SN - RIO Scanner	
I:1.24	0	1747-SN - RIO Scanner	
I:1.25	36	1747-SN - RIO Scanner	
I:1.26	9216	1747-SN - RIO Scanner	
I:1.27	0	1747-SN - RIO Scanner	



For the PLC5, the IO mapping is listed in the channel properties:

Rack	Group	Size	Fault	Inhibit	Reset	Range
3	0	1/2		0	0	030-033
0						

Word 30 = Command Number

Word 31 = Status (IN), Parameter (OUT)

Word 32 = MSW

Word 33 = LSW

File I1 (dec)								
Offset	0	1	2	3	4	5	6	7
I:000	0	0	0	0	0	0	0	0
I:010	0	0	0	0	0	0	0	0
I:020	0	0	0	0	0	0	0	0
I:030	0	36	9216	0	0	0	0	0