GrowSphere™

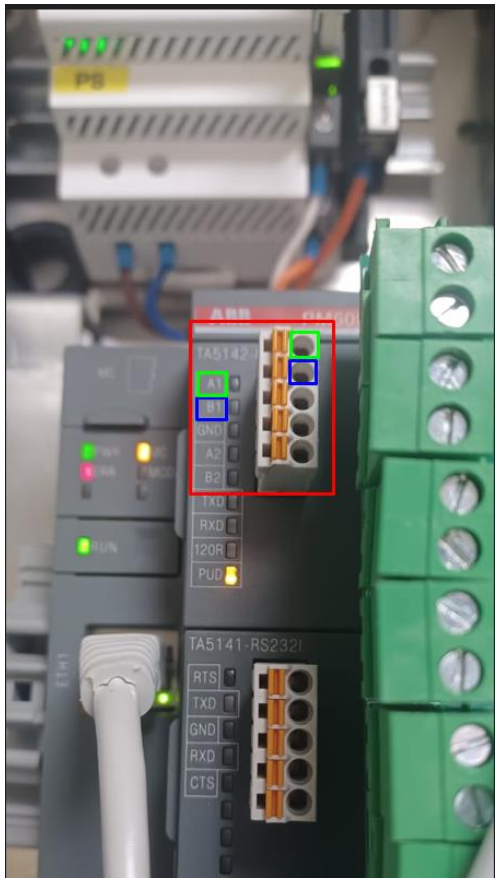
RadioNet Mapping
using “Polenet2Max Application”.

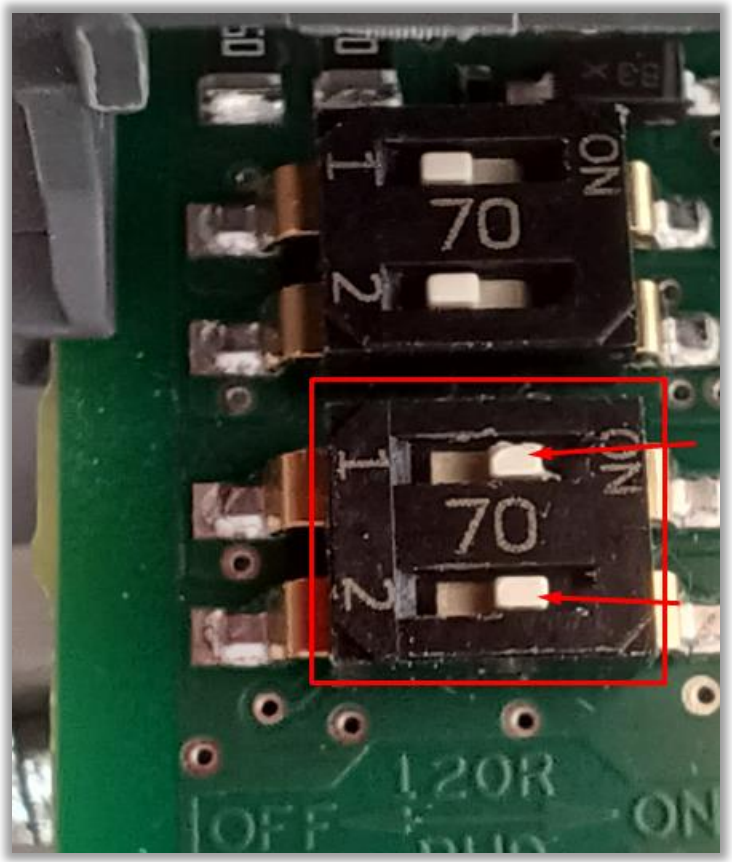
Jan 2023

NETAFIM™ DIGITAL FARMING

orbia

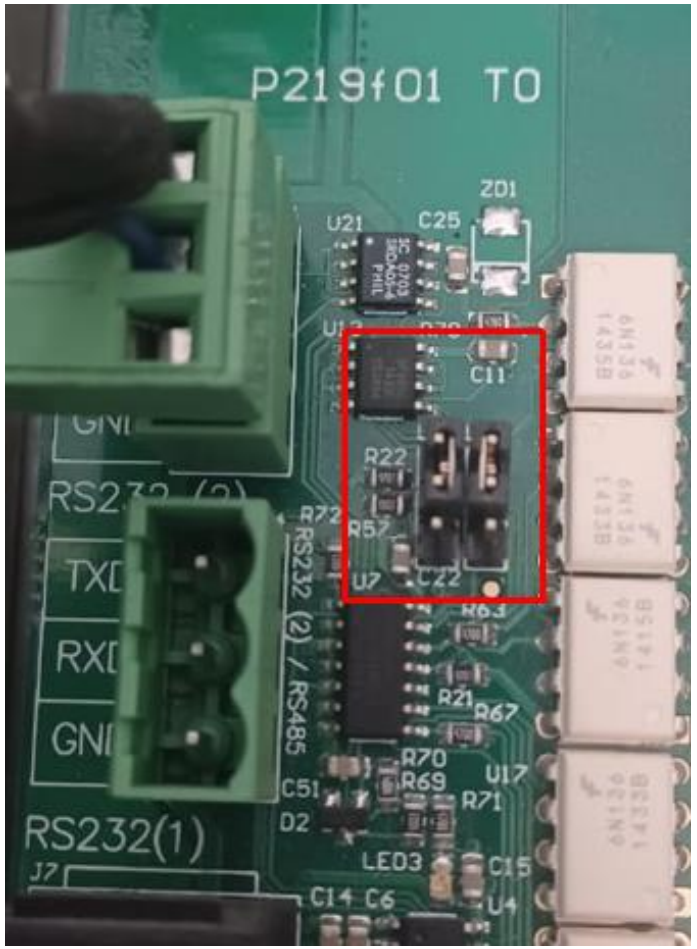
RadioNet interface with GS is currently only via RS485. RS485 Module must be installed on Upper Port. Note the “DIP Switch” position on the RS 485 module marked in RED Must be towards the “ON” Side



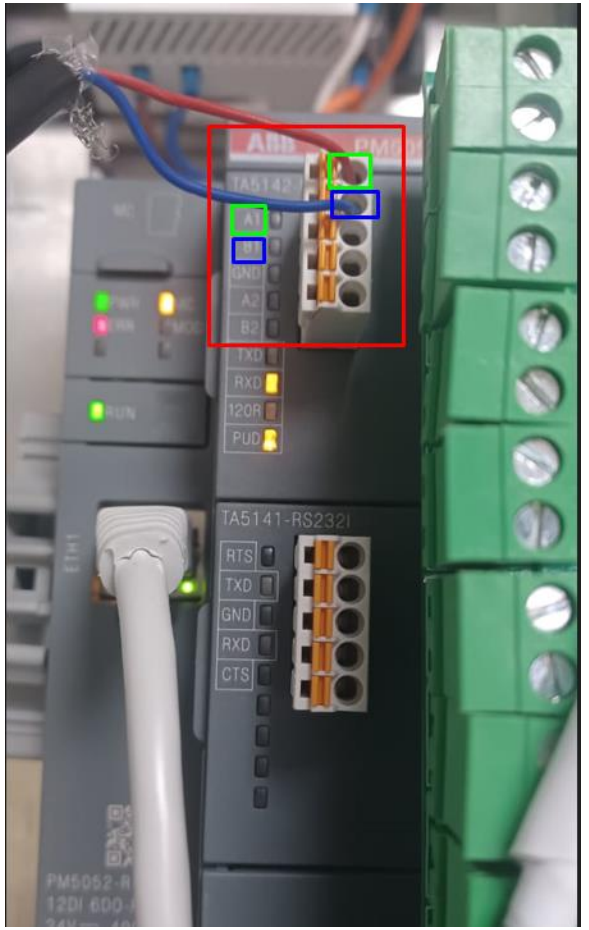


Wiring Between Host & GS max Controller
A to A & B To B. LK1 & LK2 Jumper on the RadioNet Host should be on Upper side

RadioNet Host



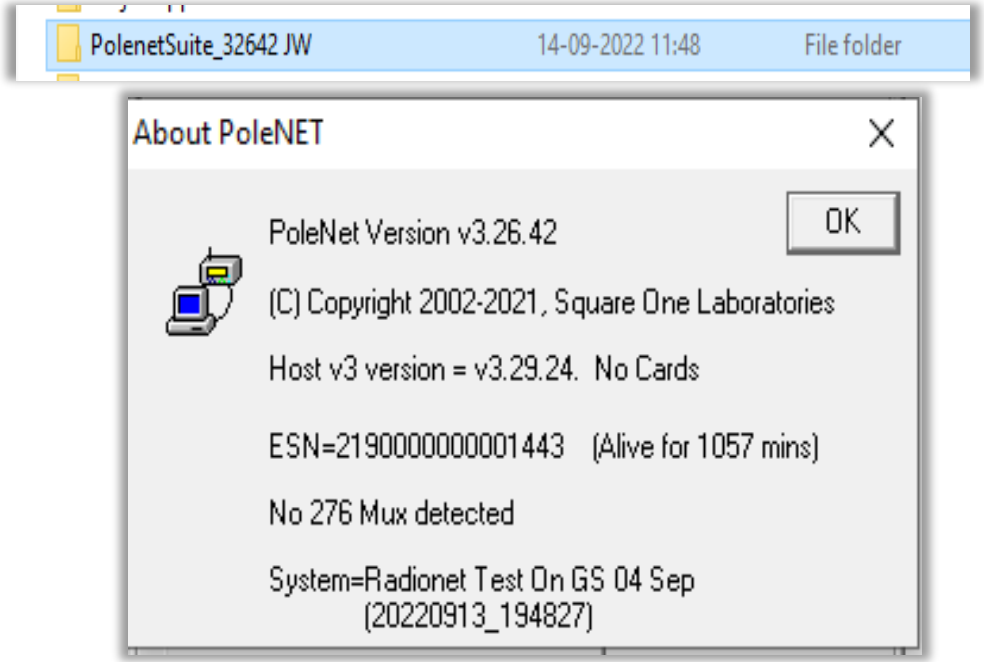
GrowSphere Max



Required Polenet Version

Always Check for Latest & Recommended Versions of PoleNet & Polenet2Max App.

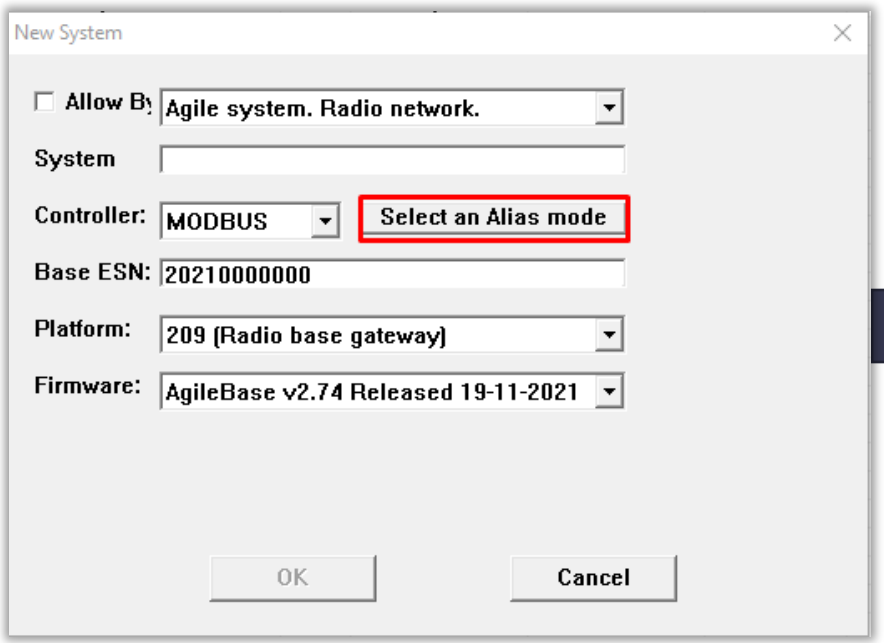
- Use PoleNet Version: 3.26.42 Or Newer Version



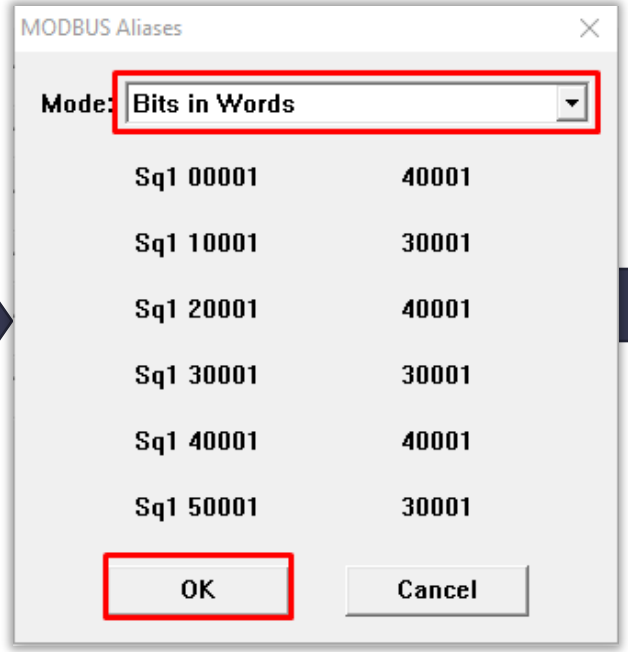
- Use Host Firmware Version: 3.29.24 the Newer Version
- Use Base Firmware Version: 2.74 Or the Newer Version
- Use RTU Firmware Version: 2.74 Or the Newer version

Create New System in PoleNet. If you have New System, then ignore Slide No 6 to 9 & then Continue.

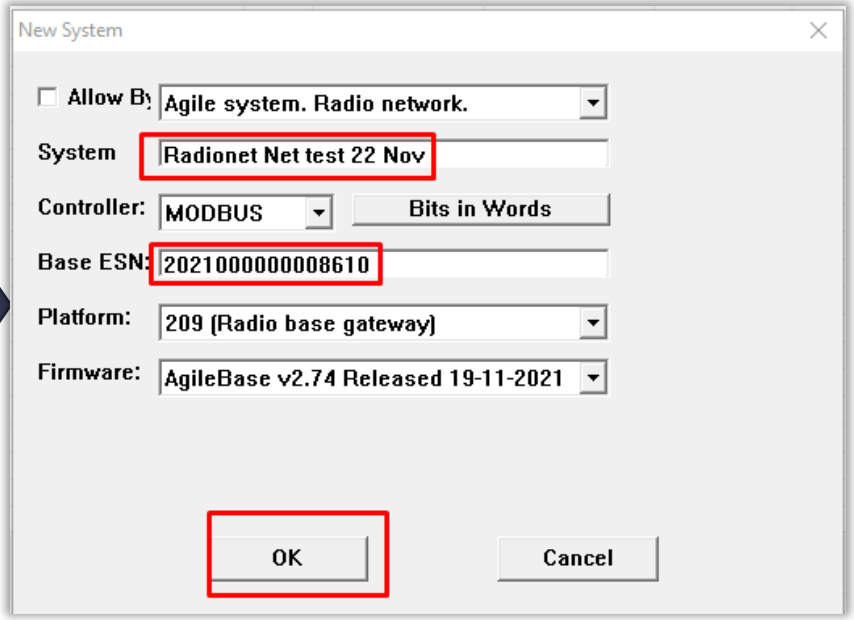
- Create a new System in PoleNet



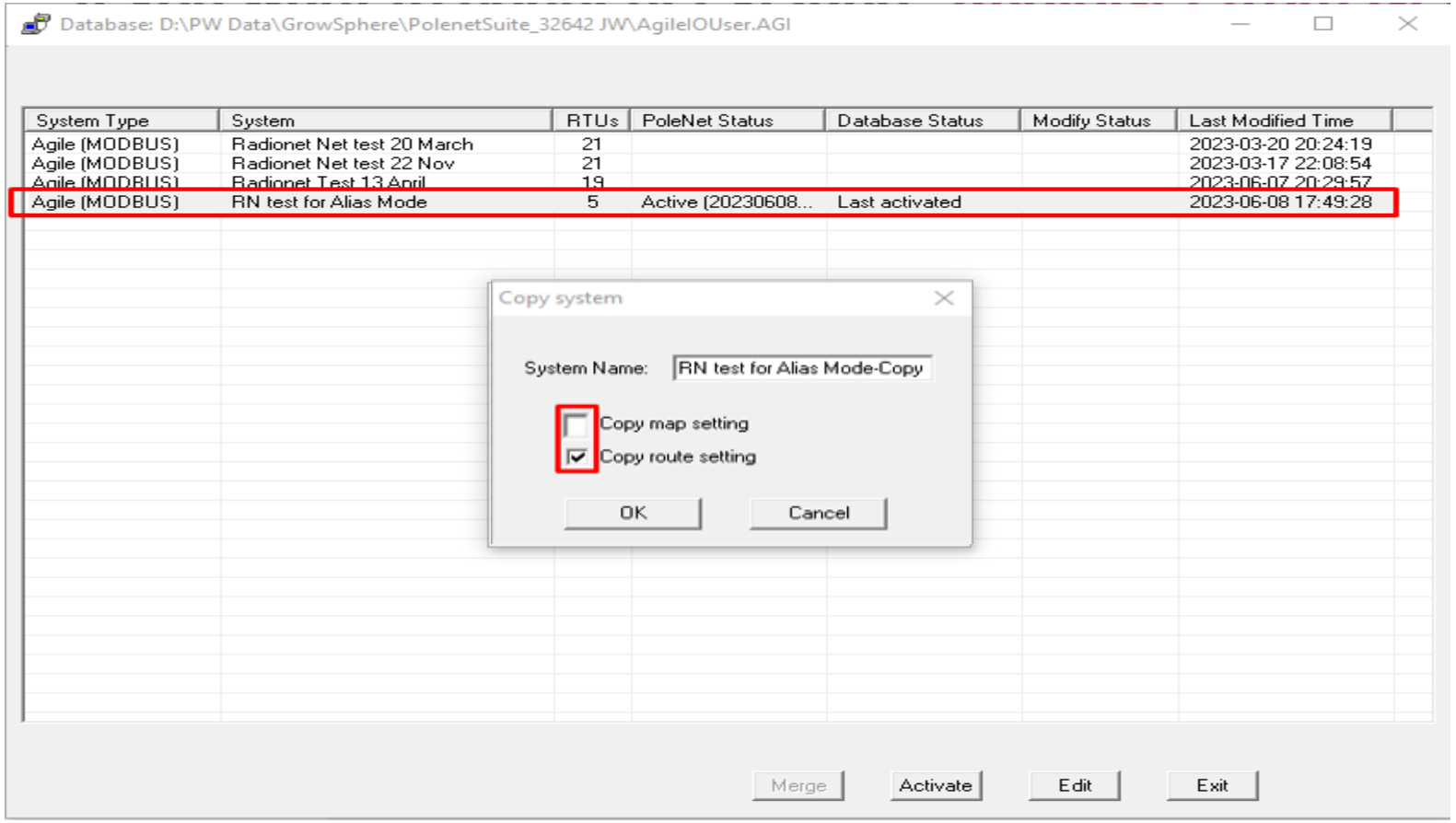
- Select Bits in Words



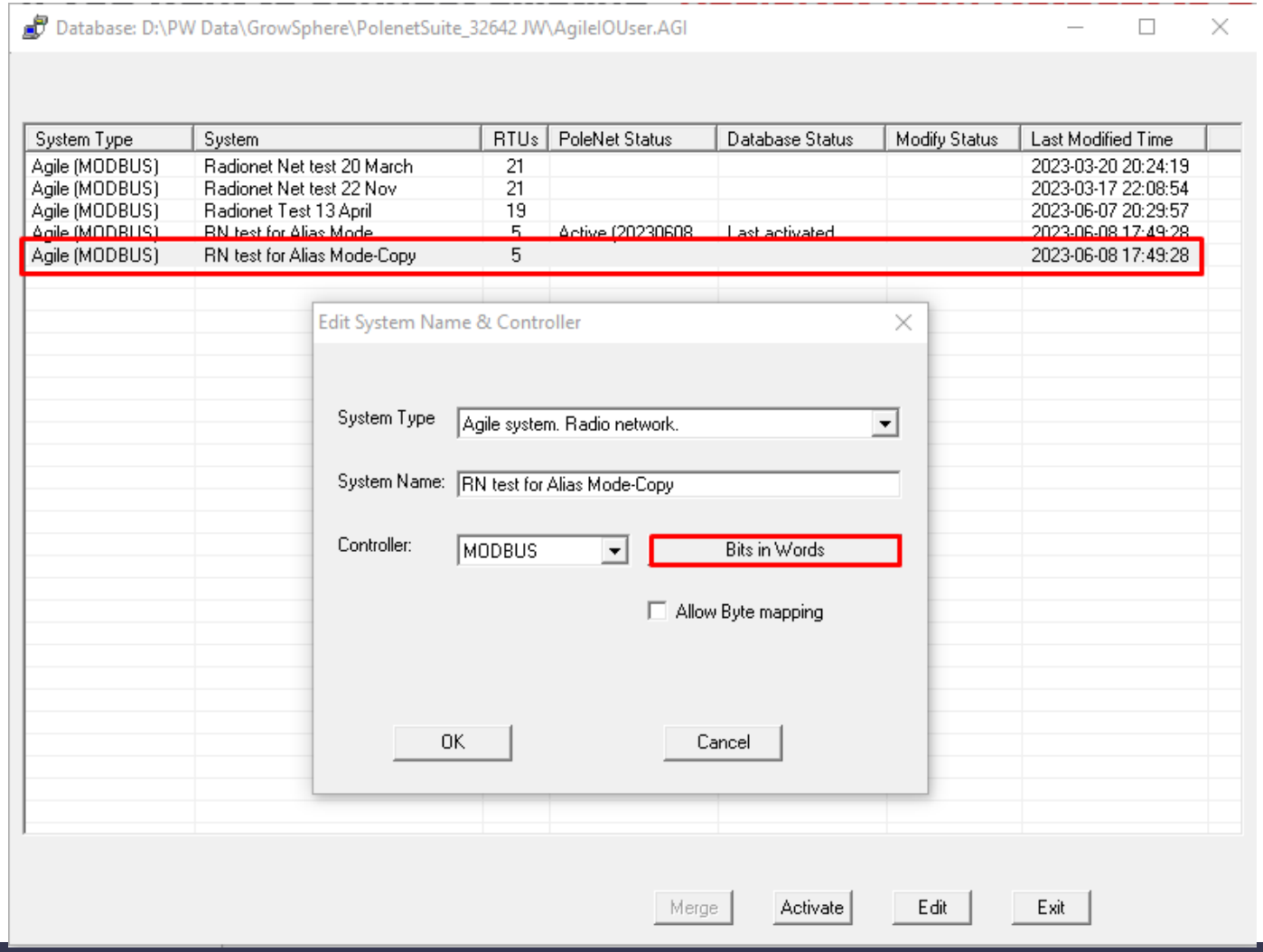
- Enter the System Name and Base ESN No.



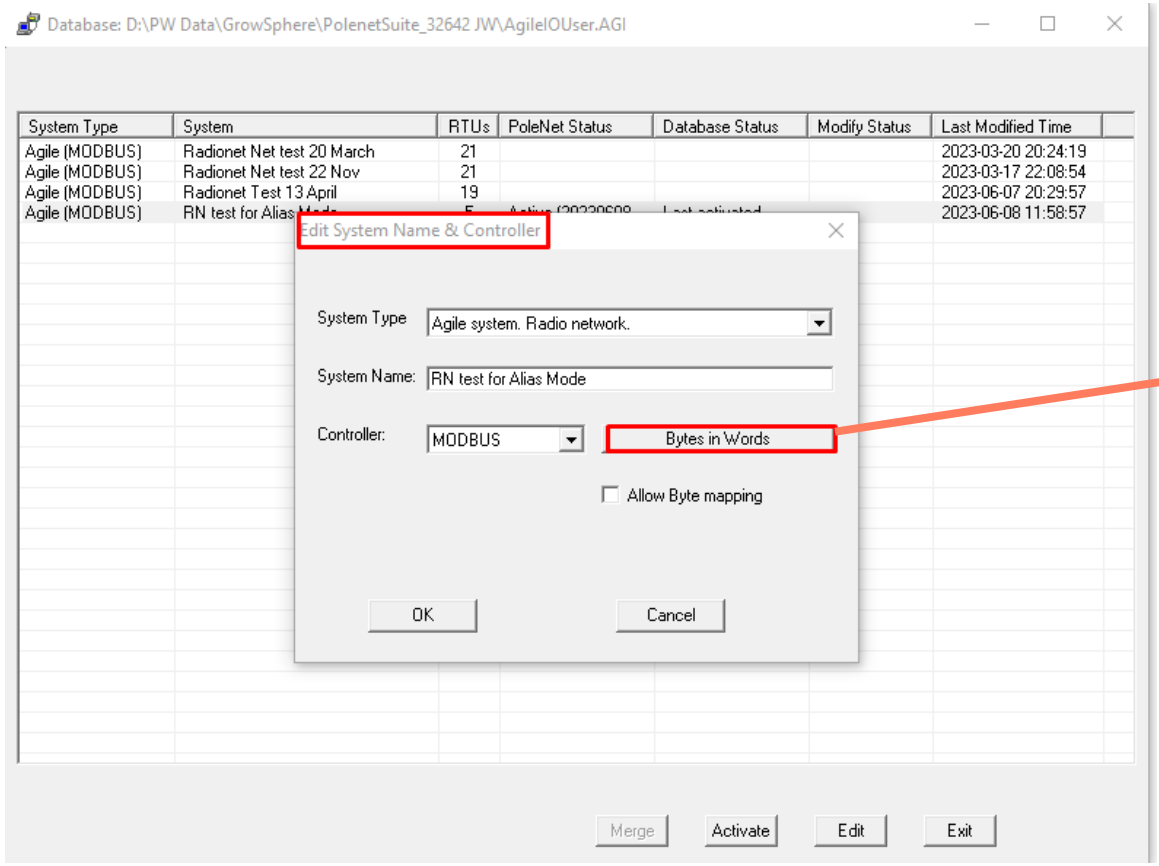
if you want to connect existing "RadioNet from NetBeat to GS Max", then you need to do some Changes in Polenet. Right Click on Activated File and Copy Radionet System. Uncheck Map & Route Setting & Click " OK"

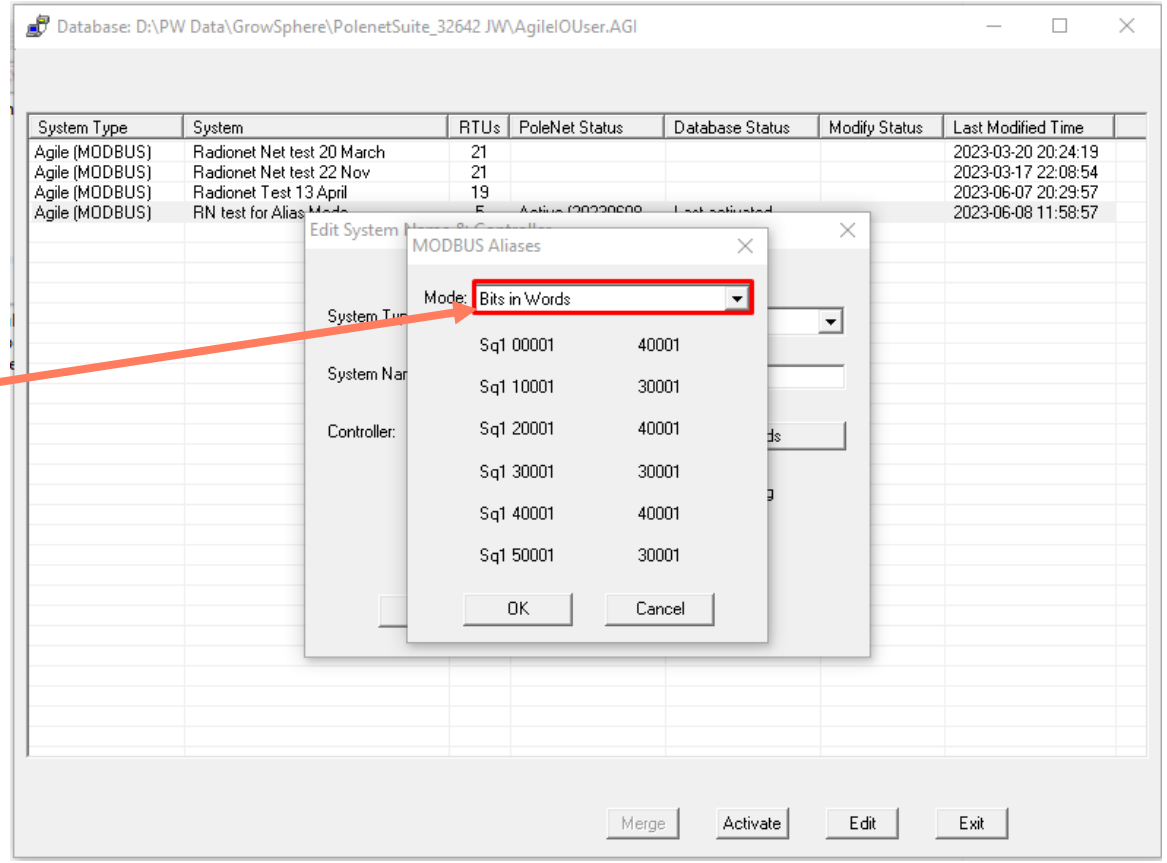


Right Click on Copied System and Select " Edit System name & Controller" and Change Alias Mode to "Bits in Words"

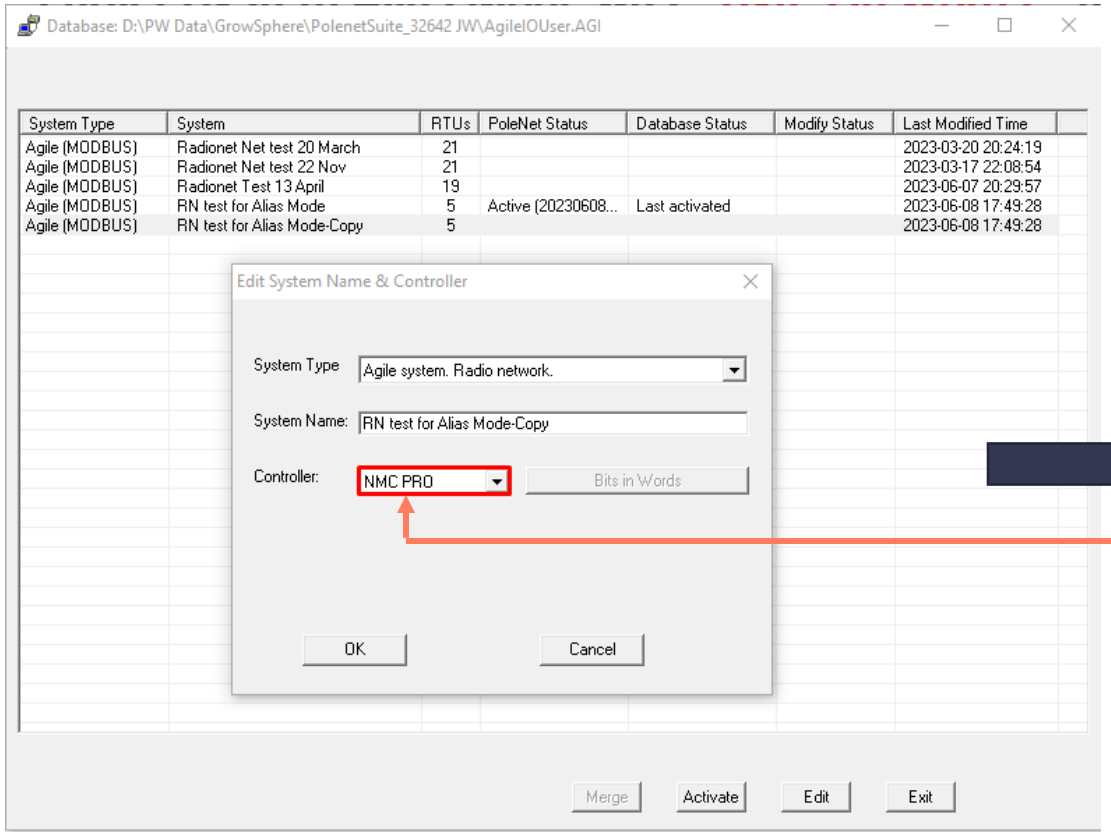


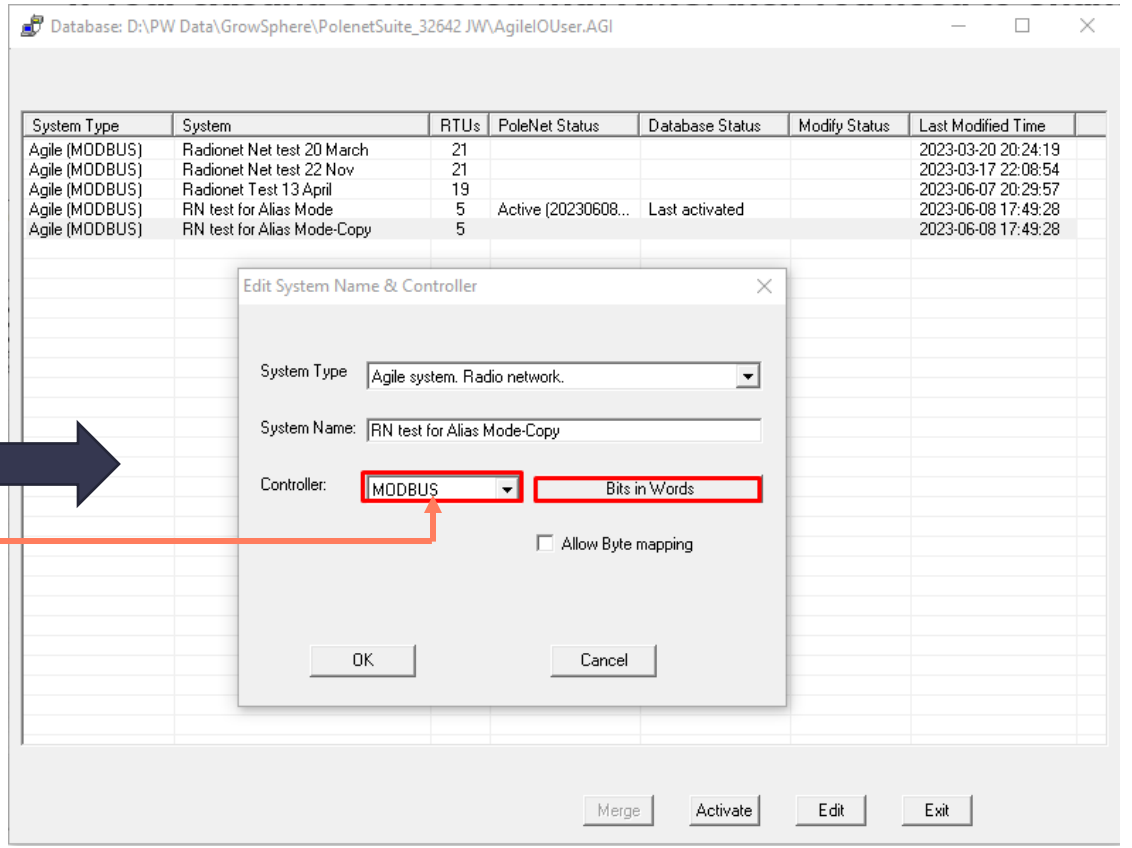
Earlier System Alias Mode was “ Bytes in Words”. for GS Max Need to Change to “ Bits in Words”.



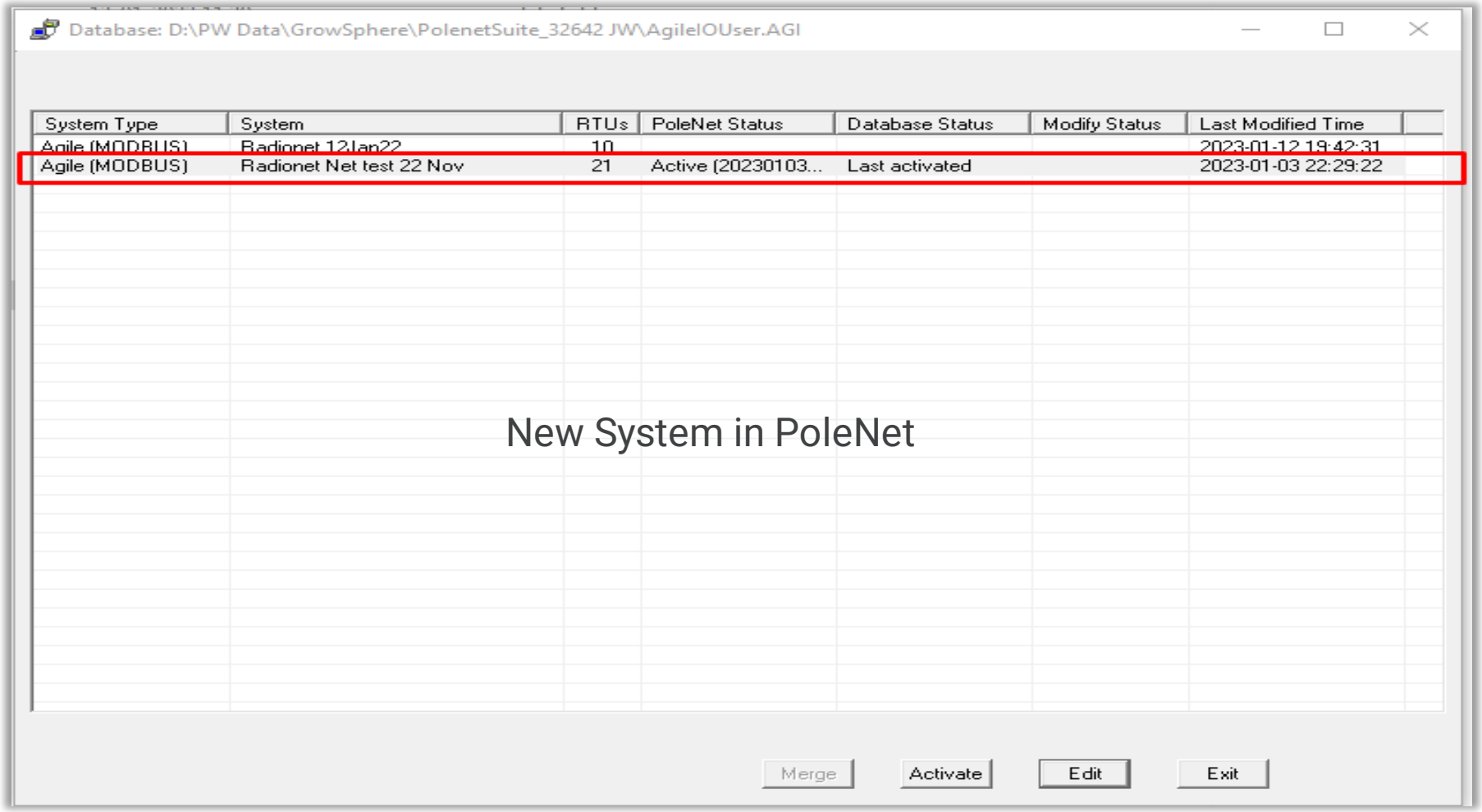


If your Radionet System Connected with NMC, then you need to Change Controller Type to “ModBus” & Alias Mode “Bits in Words” for GS Max .

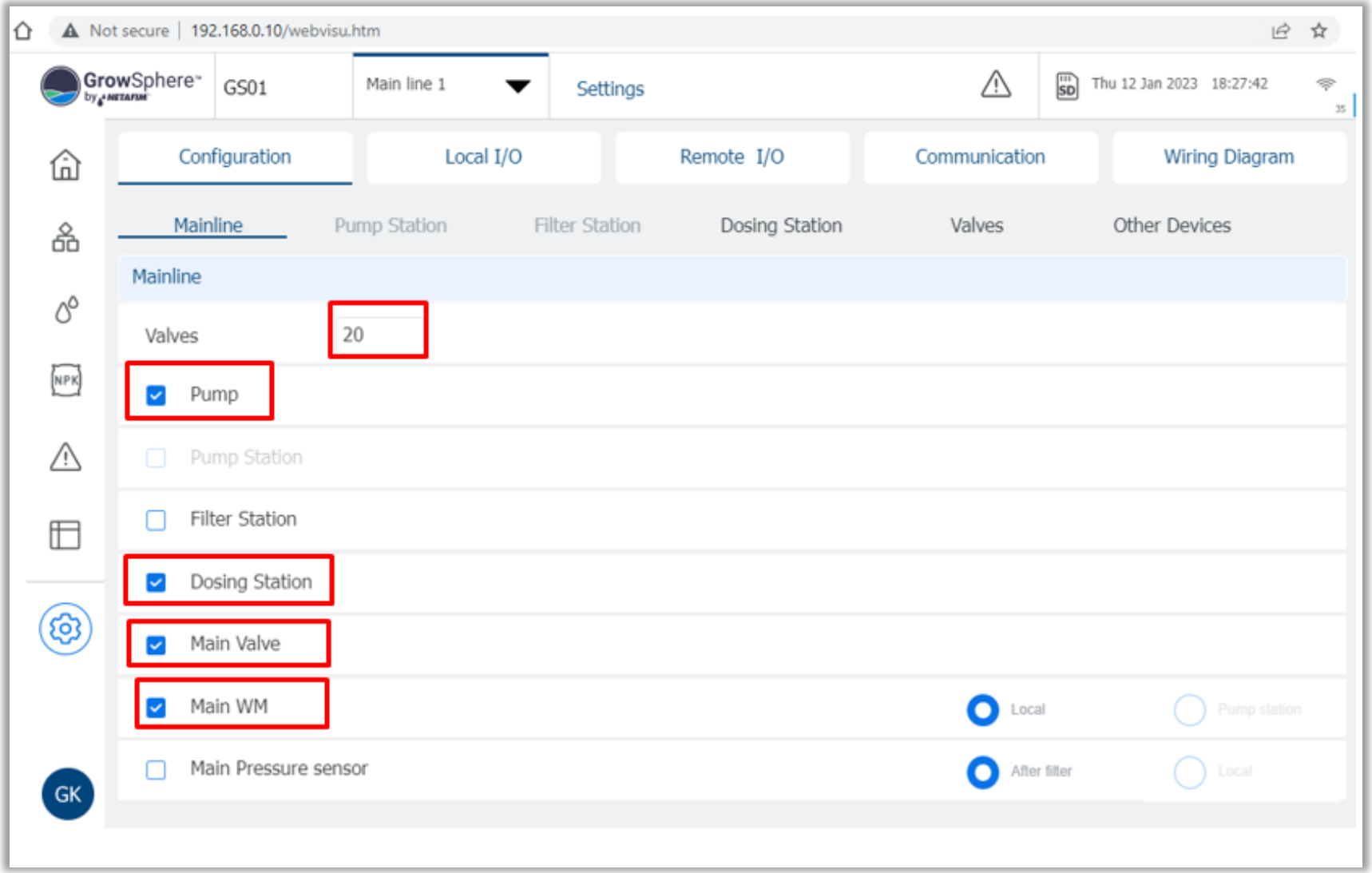




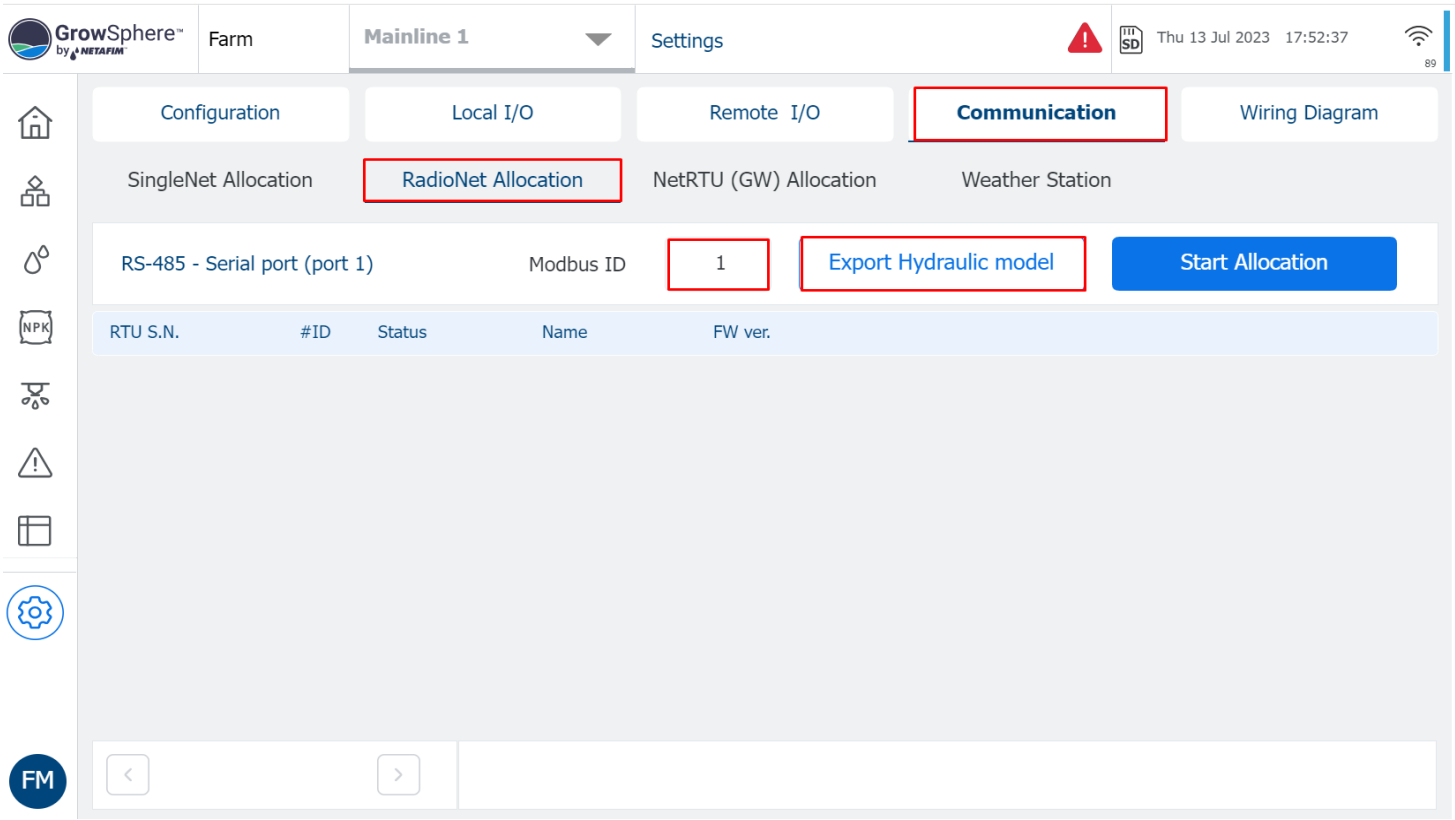
Make sure that all RTUs with expansion cards are added & Activate the System.

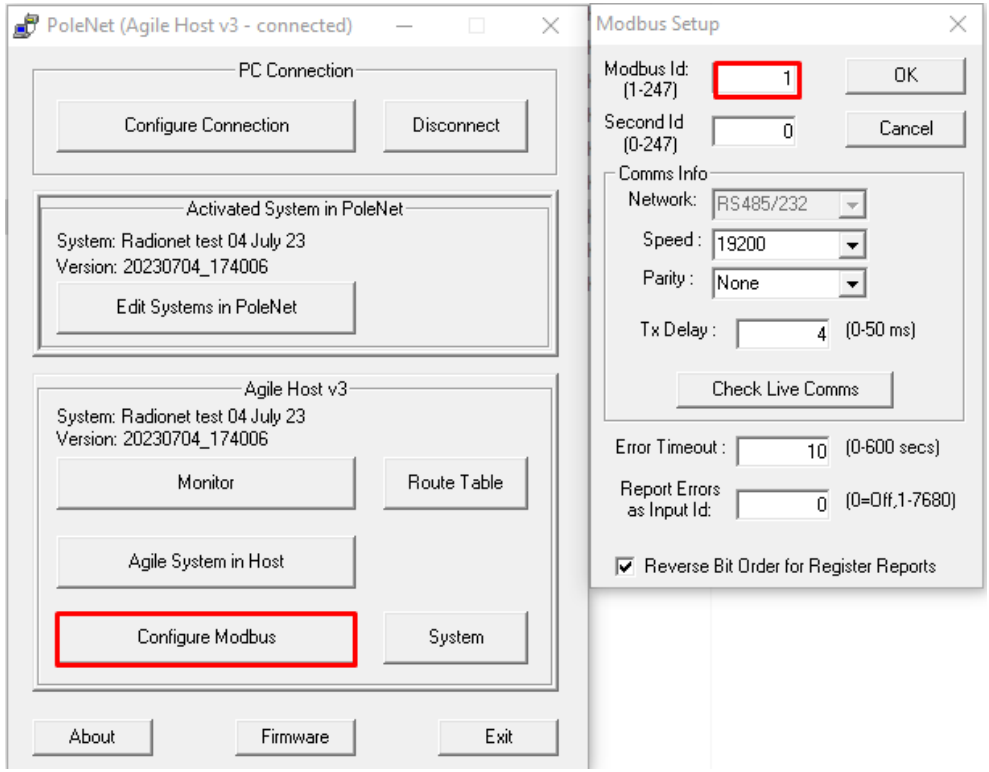


GrowSphere Hydraulic Configuration

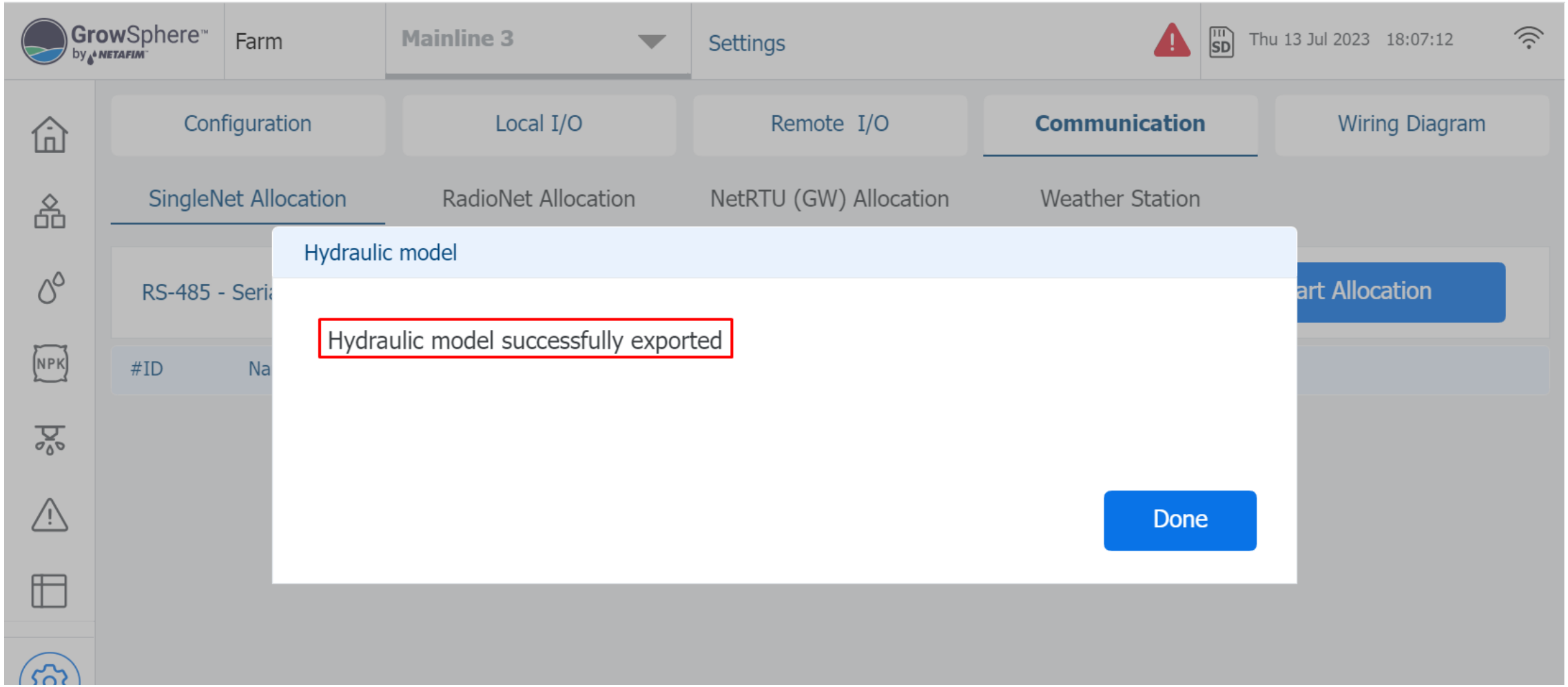


Navigate to Settings >> Communication >> Select RadioNet >>Export Hydraulic Model. Also Check Modbus ID is same on Modbus Setup & Allocation Screen.

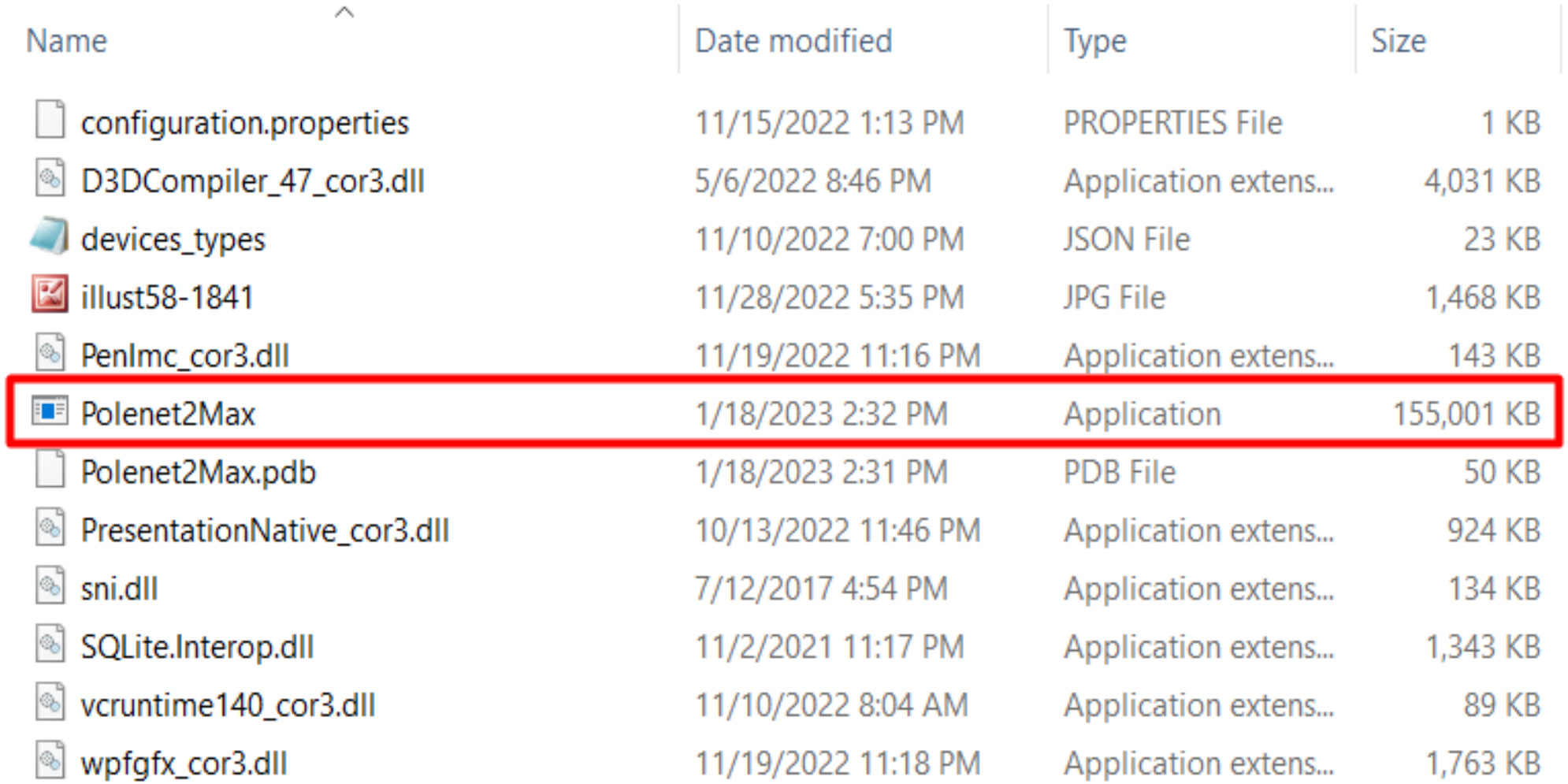




After Successfull “Export”, Click on Done

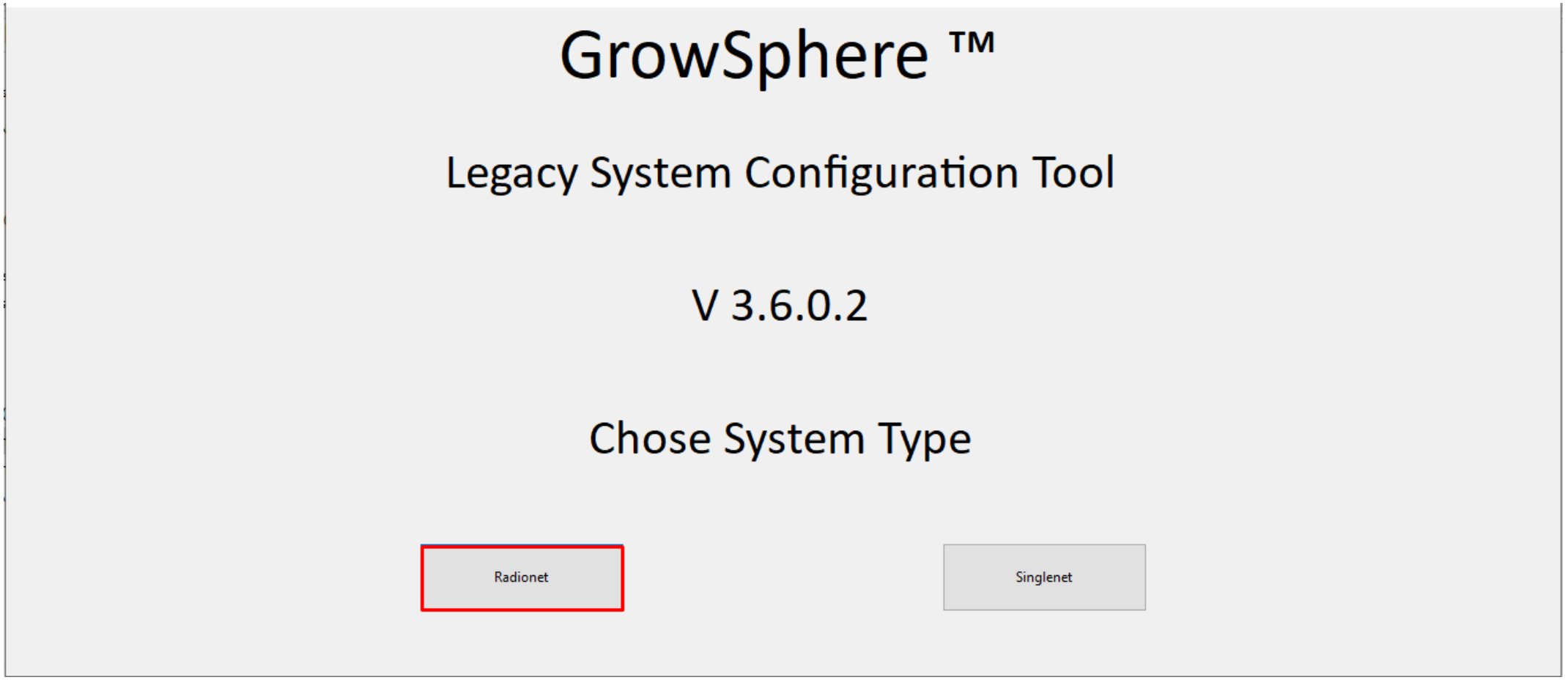


Open “Polenet2Max” Application

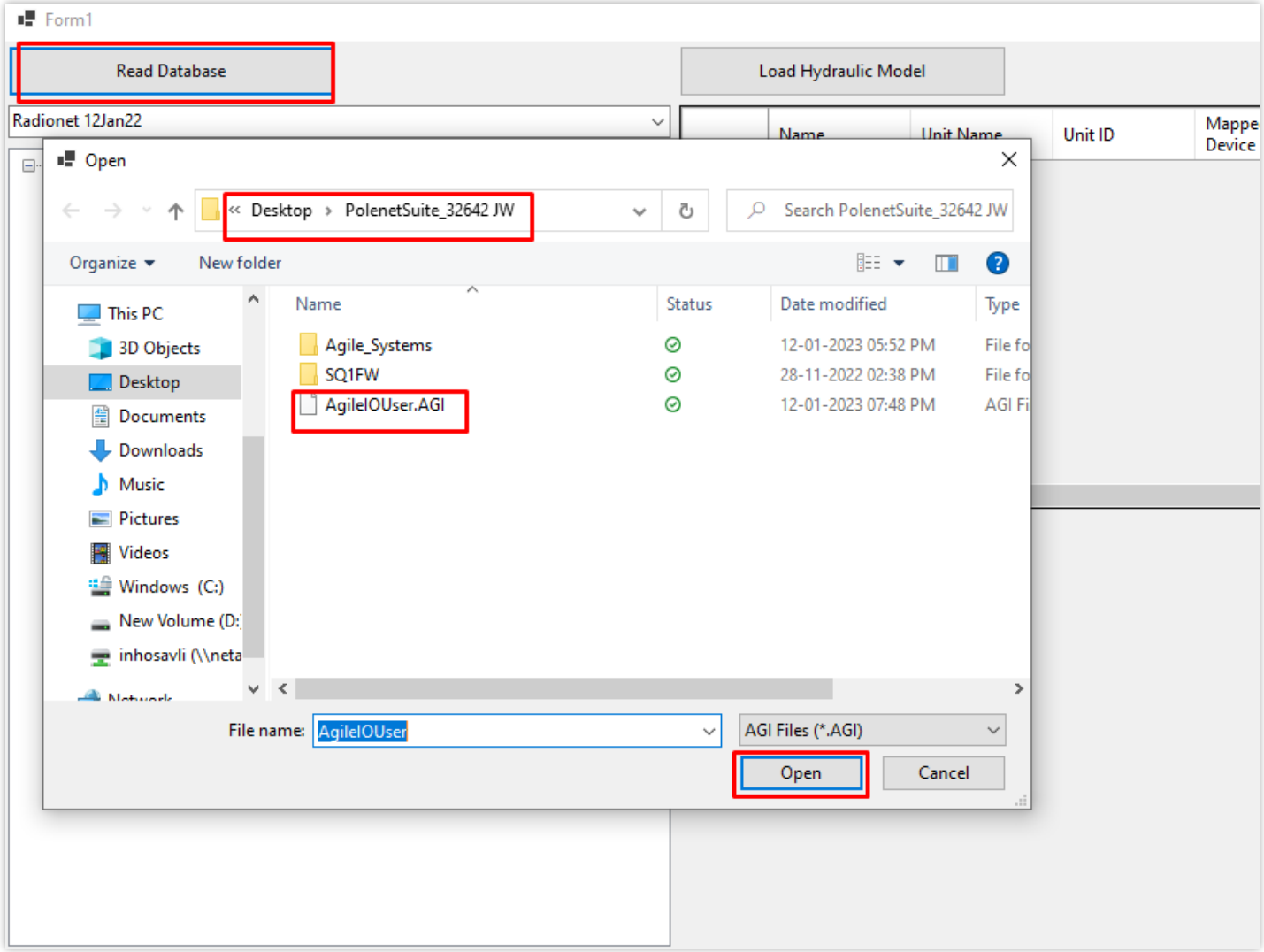


Name	Date modified	Type	Size
configuration.properties	11/15/2022 1:13 PM	PROPERTIES File	1 KB
D3DCompiler_47_cor3.dll	5/6/2022 8:46 PM	Application extens...	4,031 KB
devices_types	11/10/2022 7:00 PM	JSON File	23 KB
illust58-1841	11/28/2022 5:35 PM	JPG File	1,468 KB
PenImc_cor3.dll	11/19/2022 11:16 PM	Application extens...	143 KB
Polenet2Max	1/18/2023 2:32 PM	Application	155,001 KB
Polenet2Max.pdb	1/18/2023 2:31 PM	PDB File	50 KB
PresentationNative_cor3.dll	10/13/2022 11:46 PM	Application extens...	924 KB
sni.dll	7/12/2017 4:54 PM	Application extens...	134 KB
SQLite.Interop.dll	11/2/2021 11:17 PM	Application extens...	1,343 KB
vcruntime140_cor3.dll	11/10/2022 8:04 AM	Application extens...	89 KB
wpfgfx_cor3.dll	11/19/2022 11:18 PM	Application extens...	1,763 KB

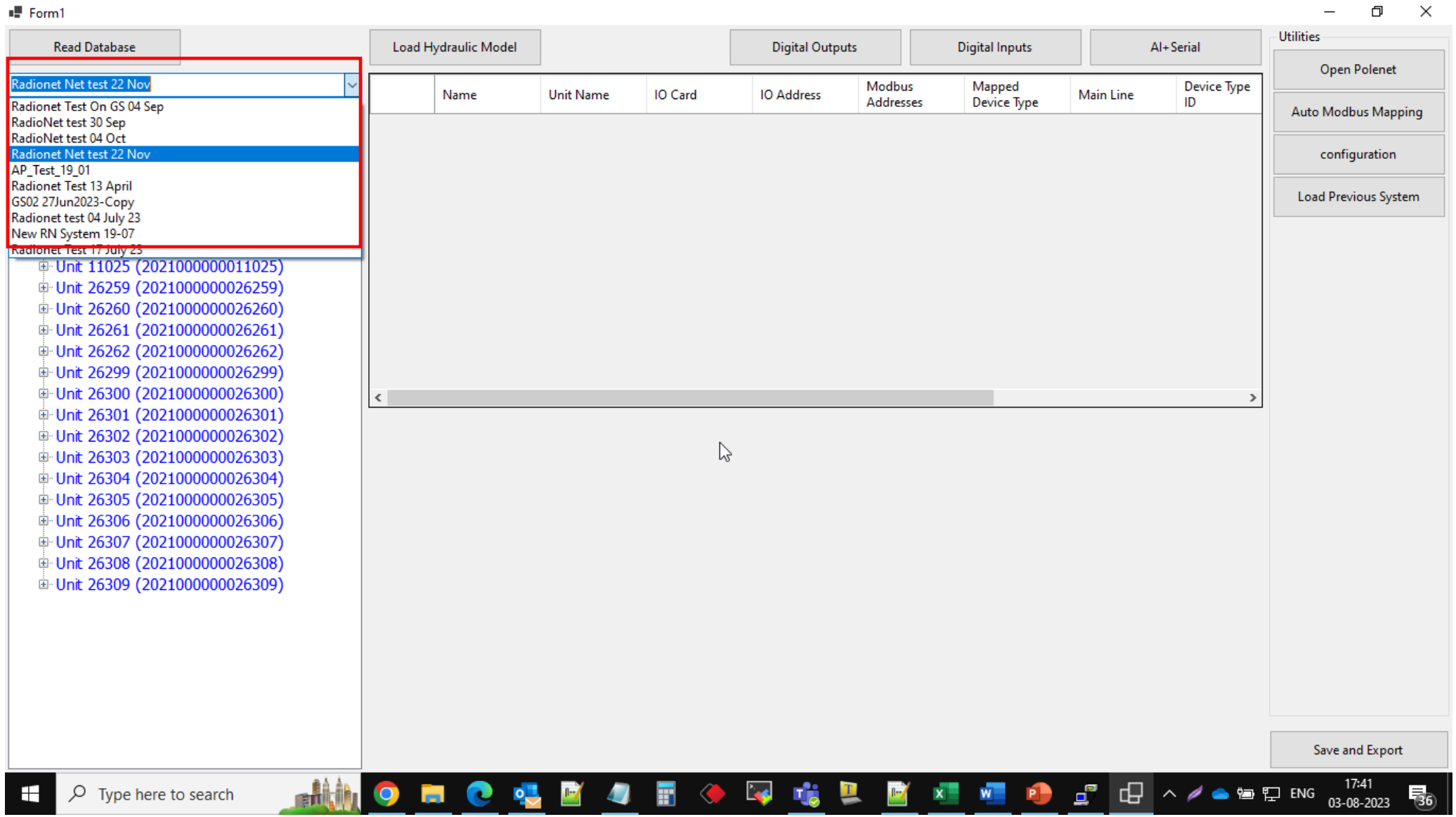
Select RadioNet



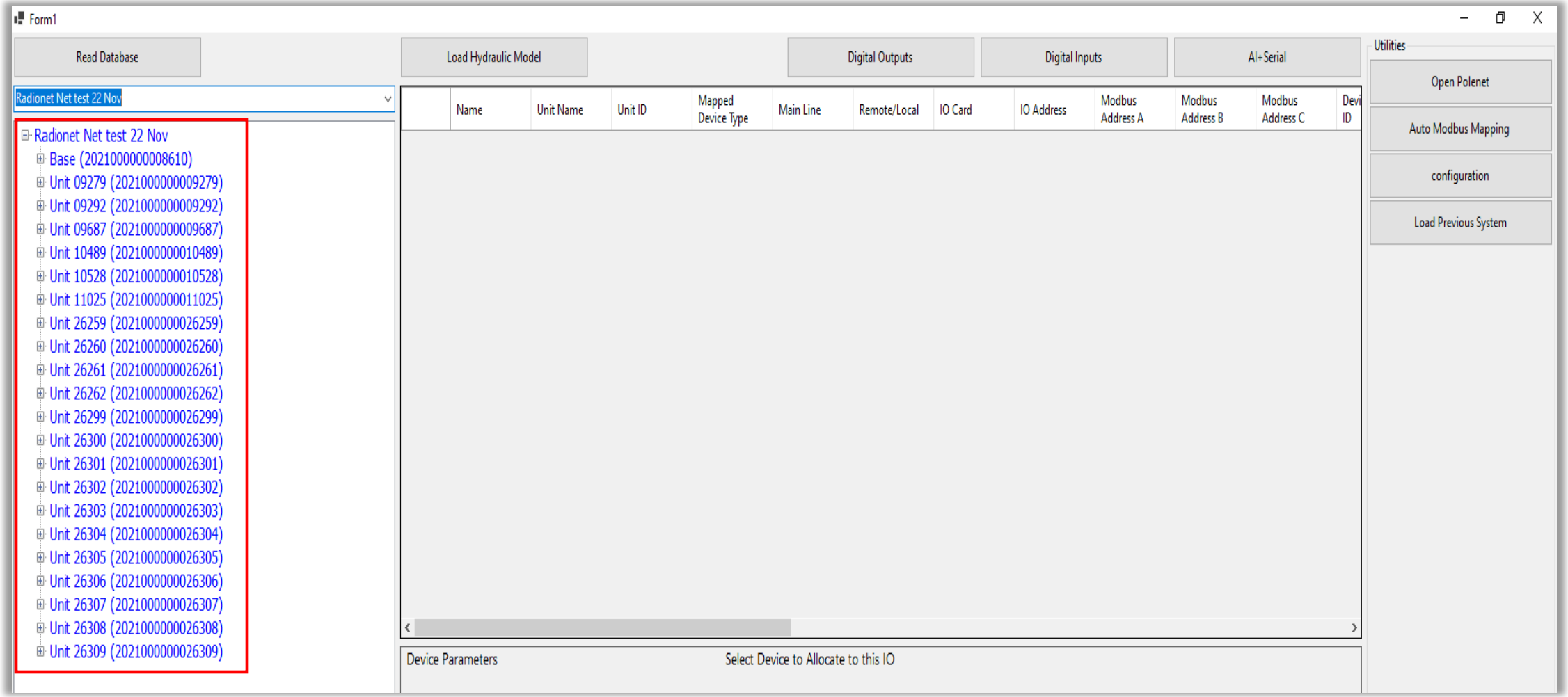
Select **Read Database**, Select **AgileIoUser.AGI** file from the **PoleNet** folder, click Open



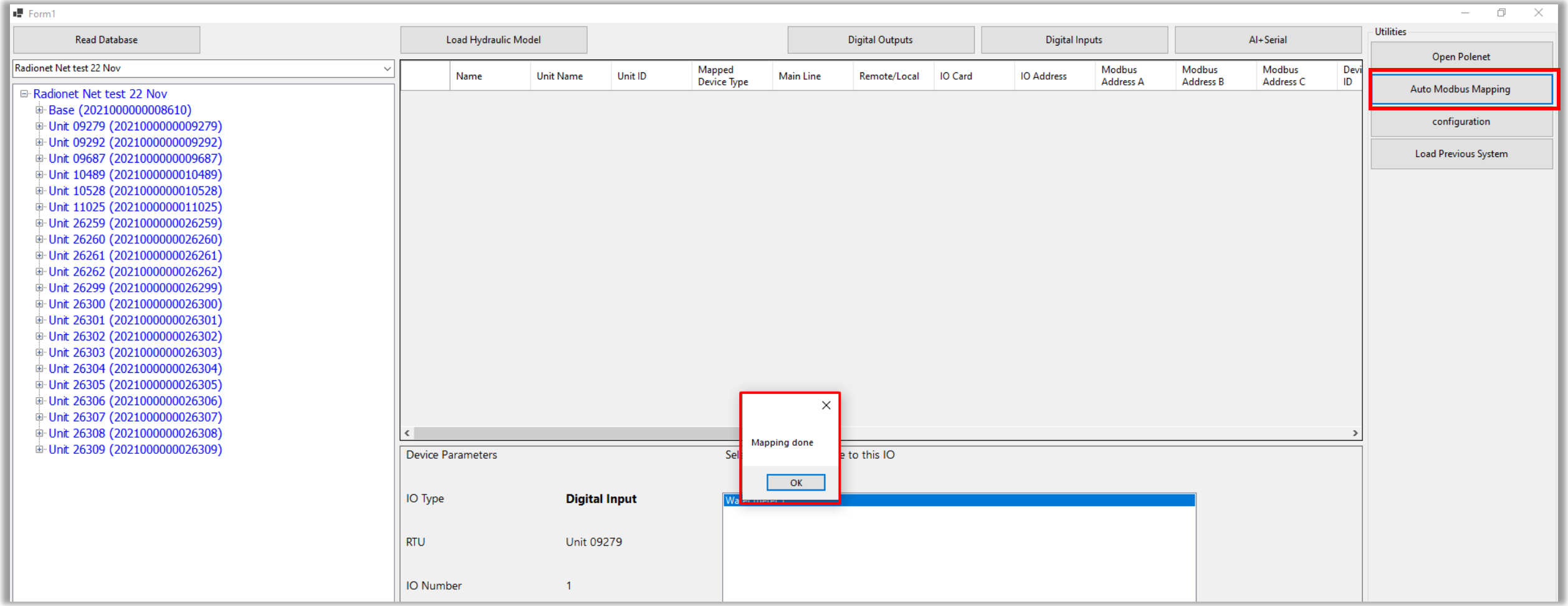
Chose correct file from list after Read Database.



PoleNet File and list of RTUs will be displayed

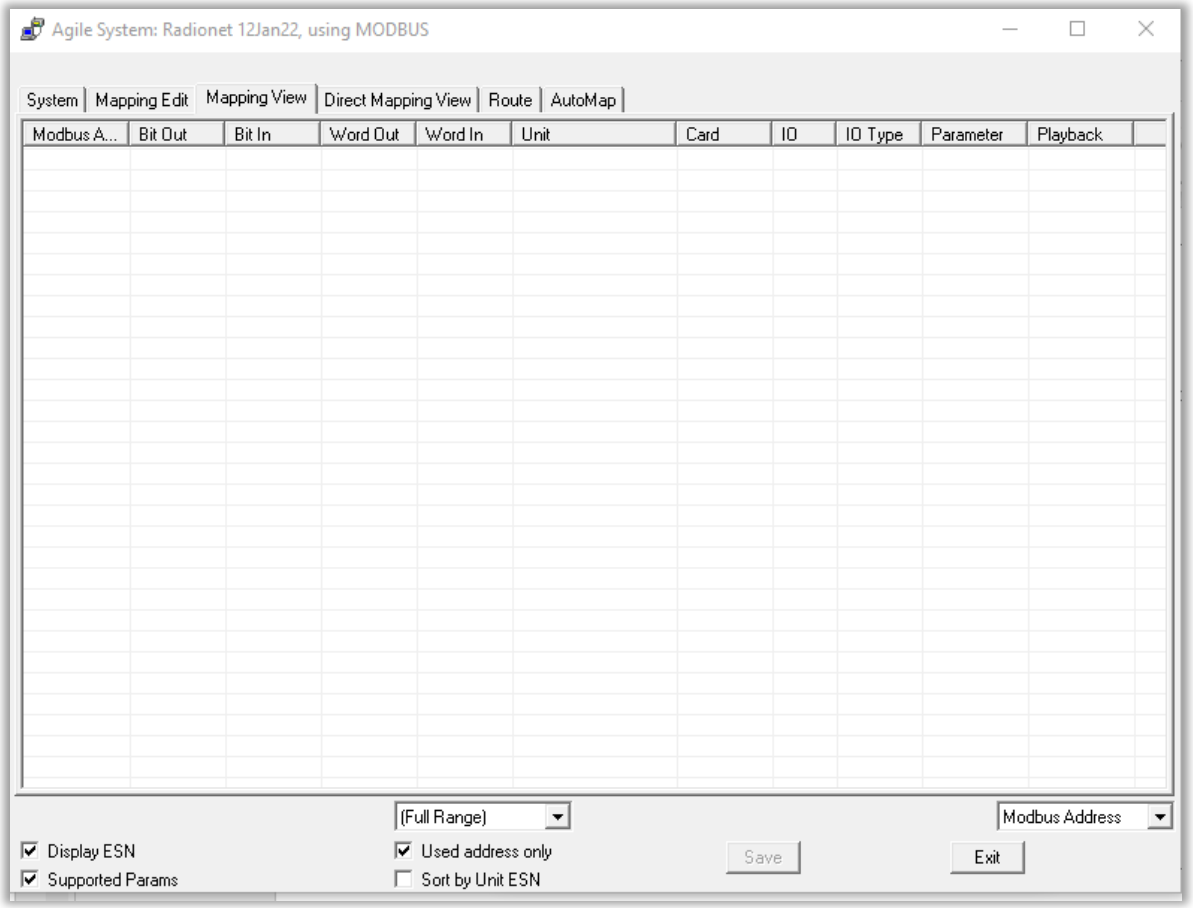


Click Auto Modbus Mapping and wait for message “Mapping Done” , click Ok

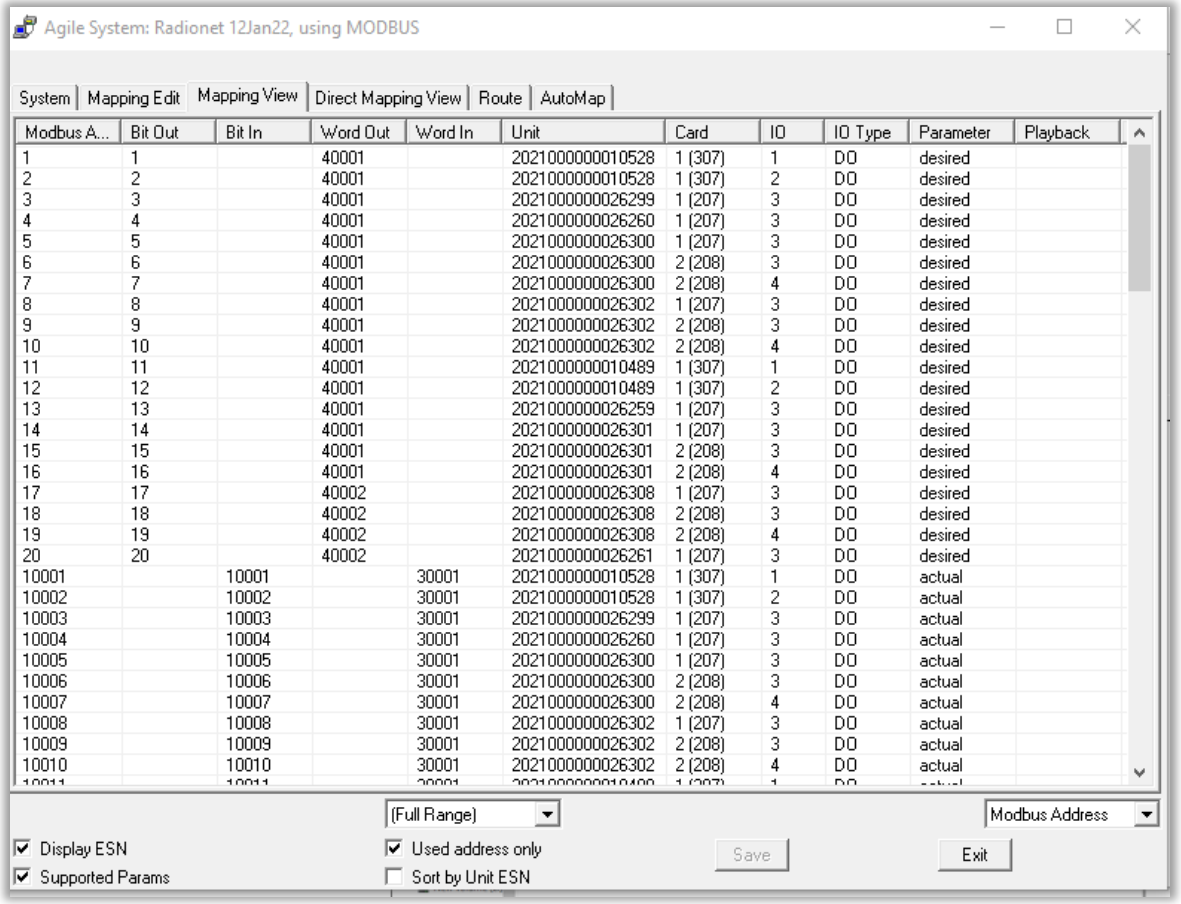


Below screen shots shows “Before Mapping” and “After Mapping view on PoleNet Mapping View Tab.

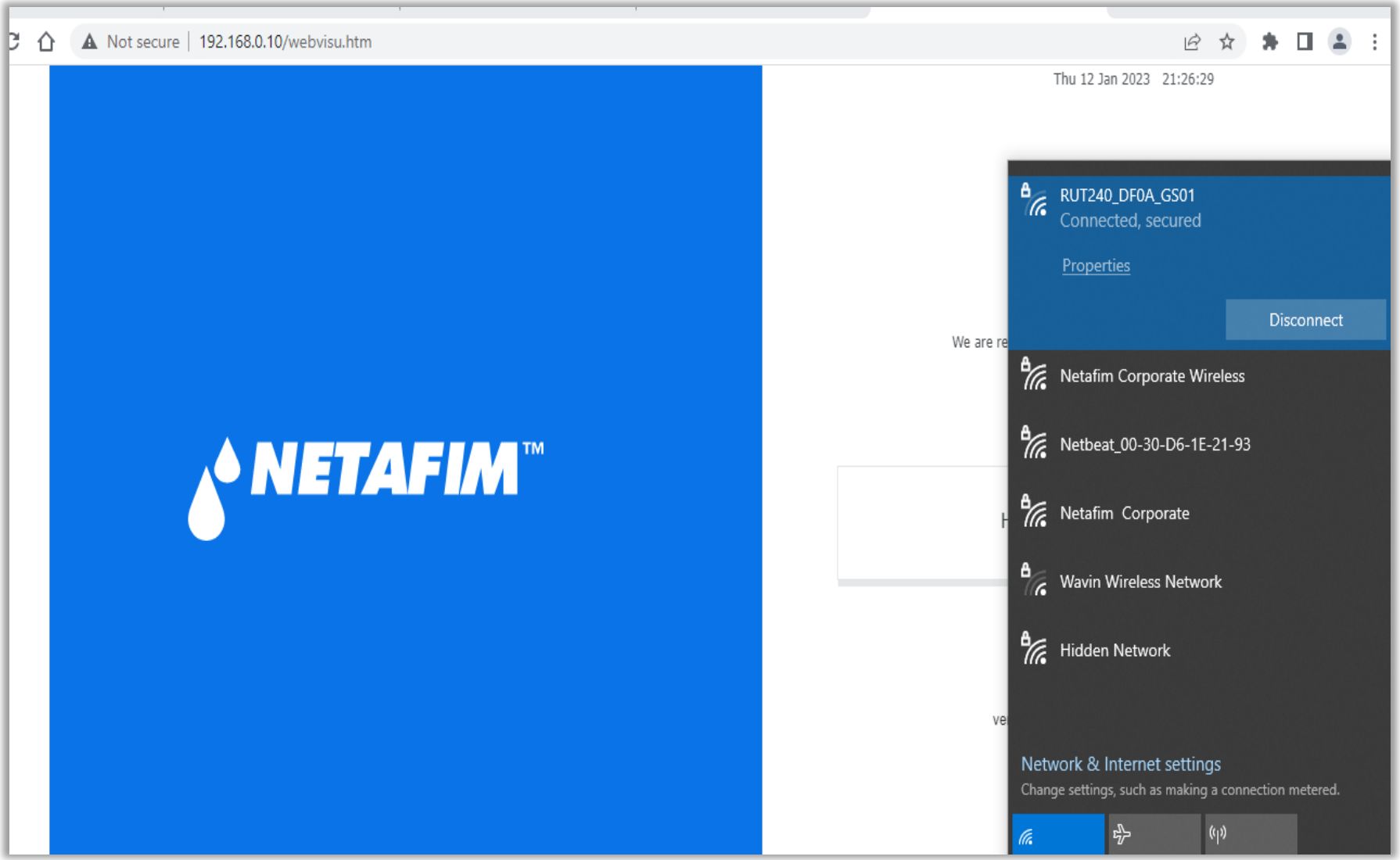
Before Mapping



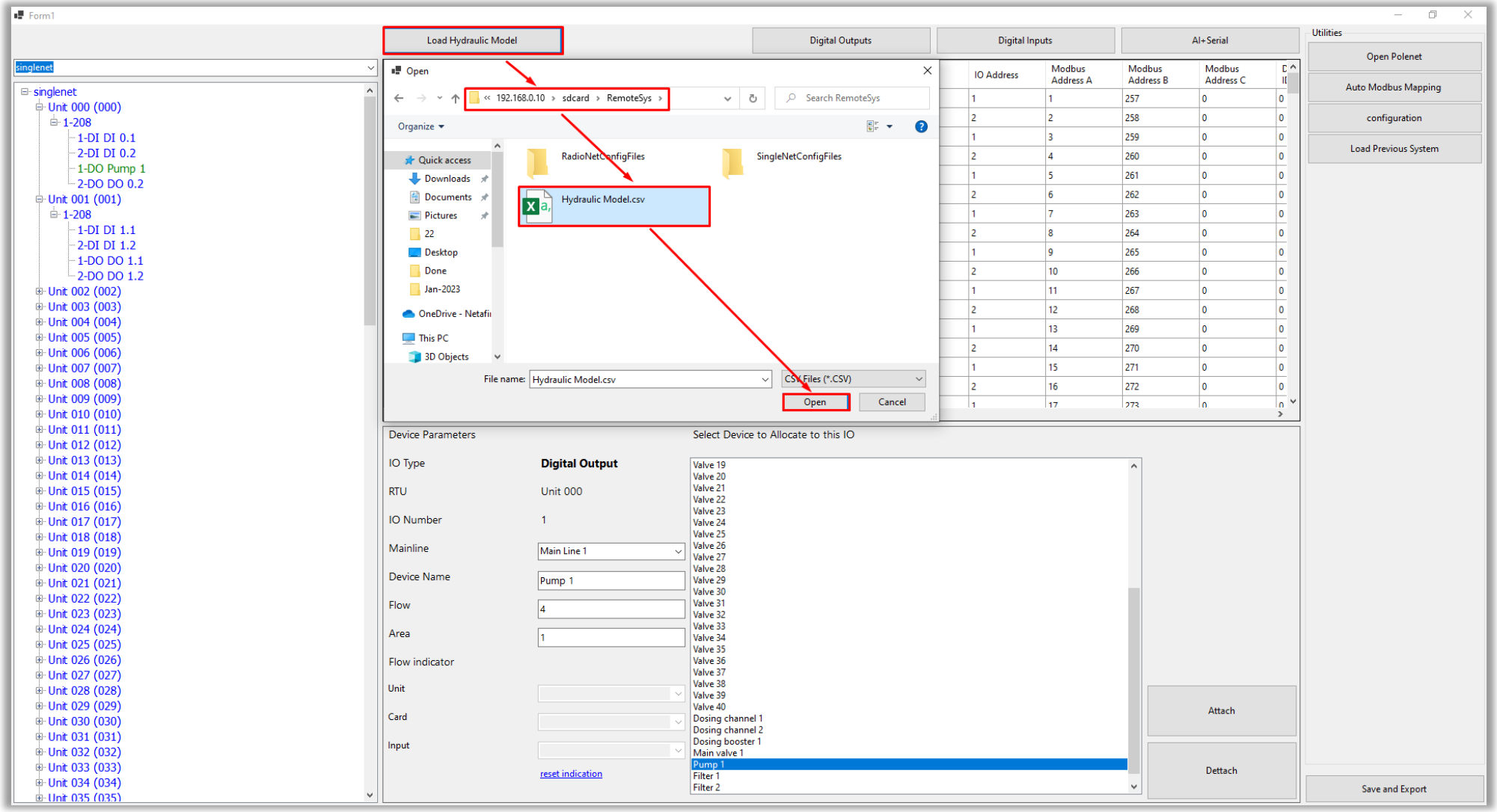
After Mapping



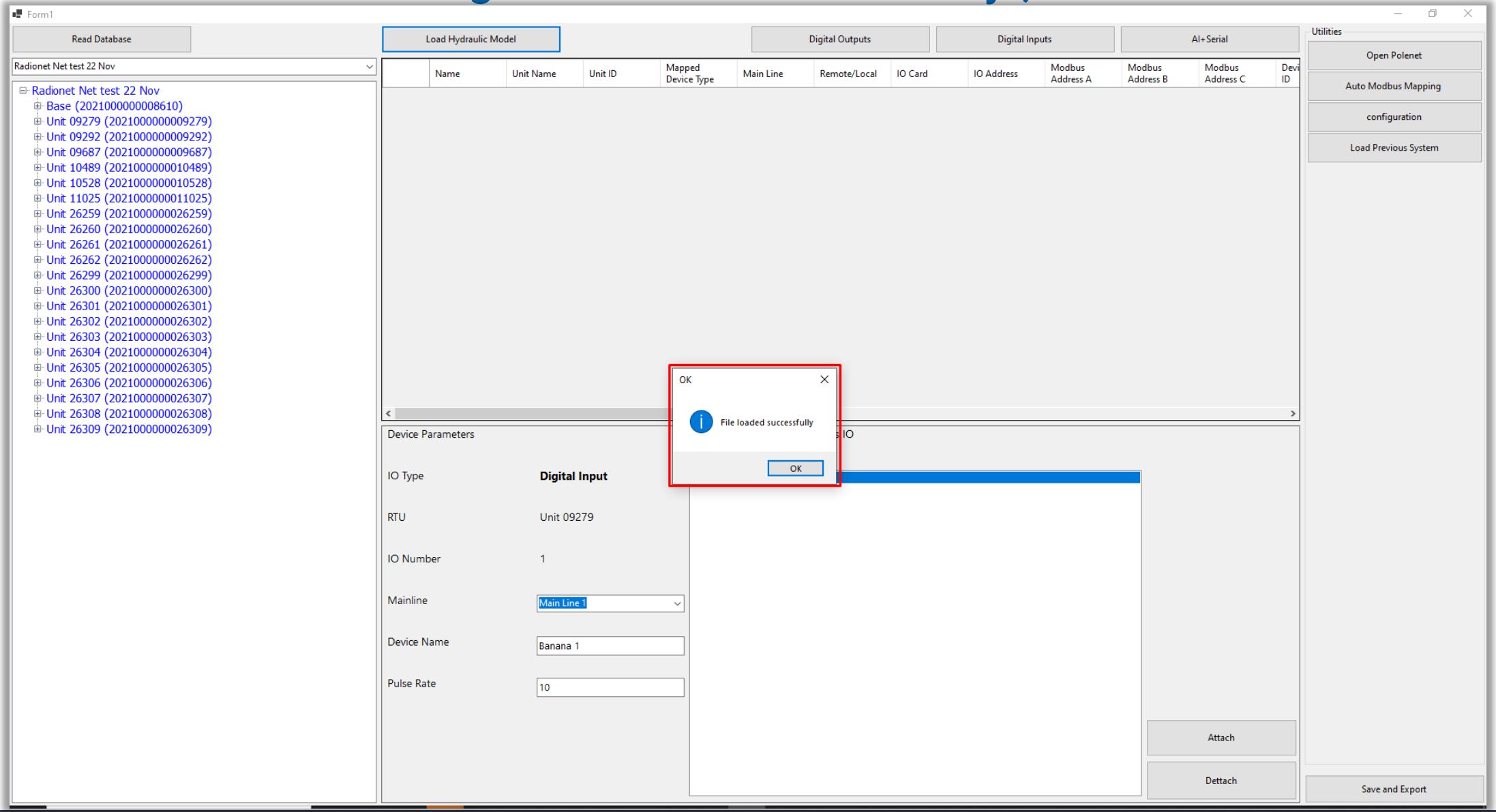
Connect to GS (in pic it is via RUT240 xx Modem)



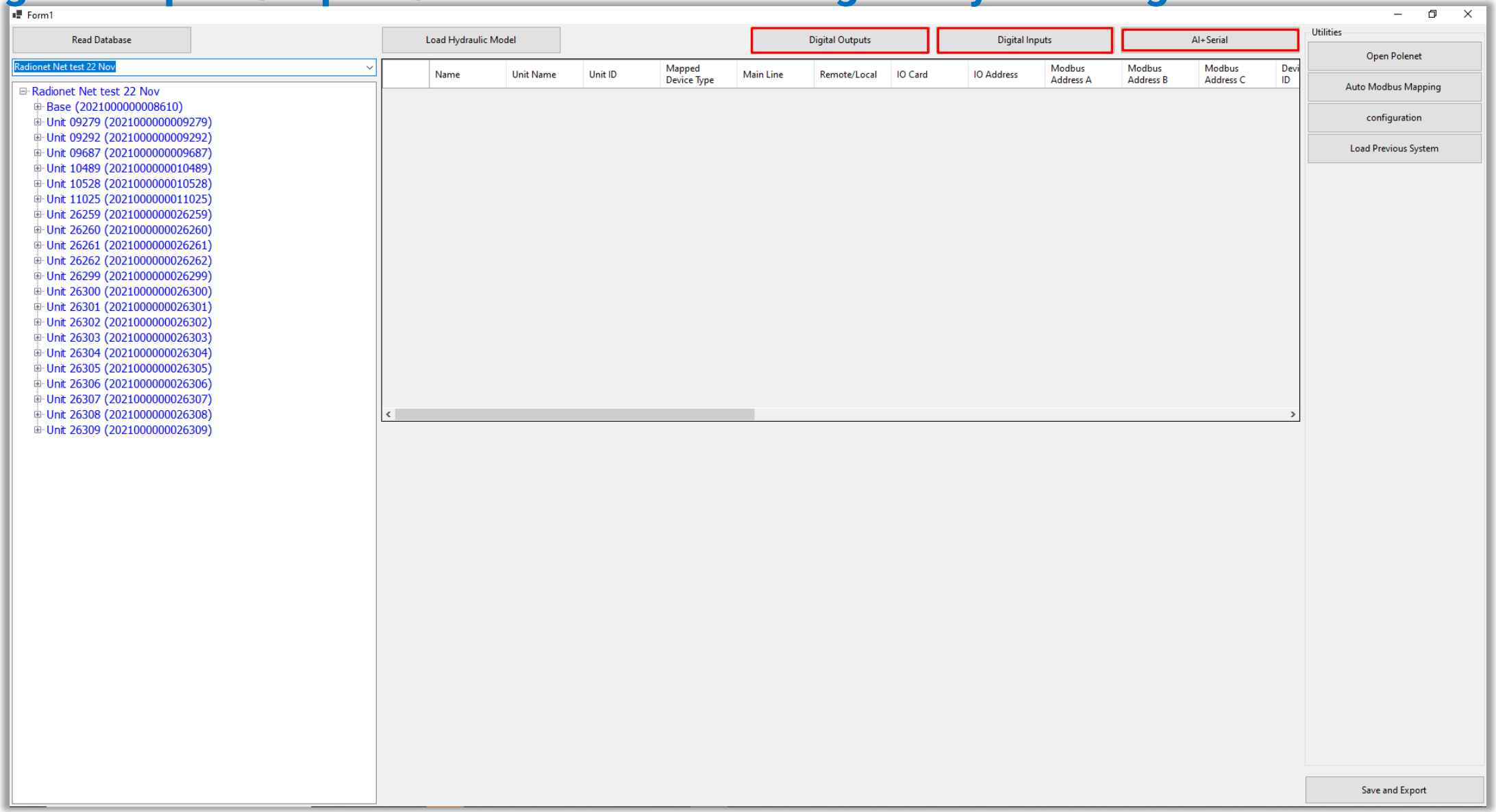
Click on “Load Hydraulic Model”, Select Path sdcard >> RemoteSys >> Hydraulic Model.csv & Click on Open



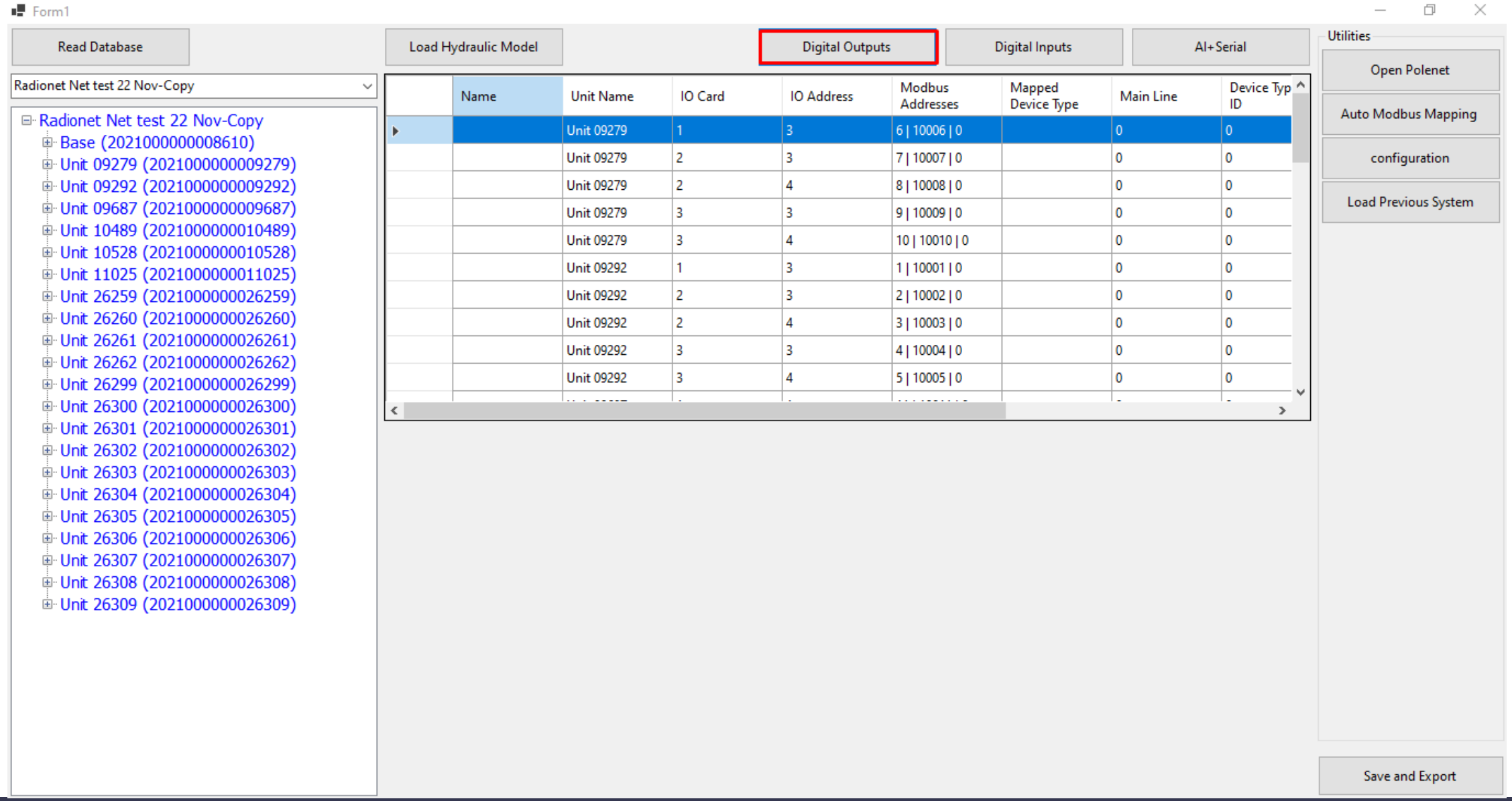
Wait for Message “File loaded successfully”, Click OK



Digital Outputs / Inputs / AI+Serial can be assigned by selecting relevant Tabs

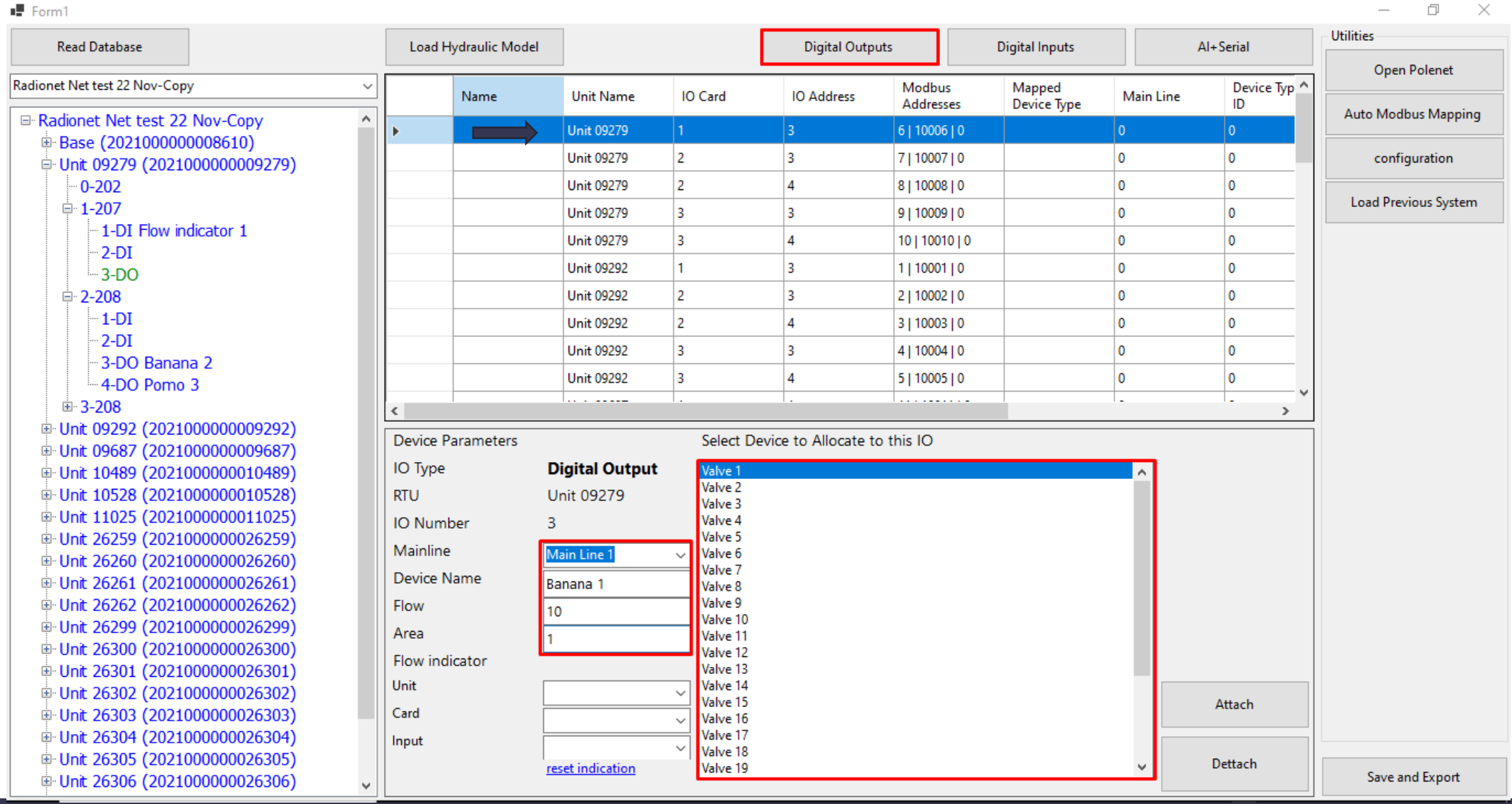


Click on “Digital Outputs” Tab, this will show DOs available on all RTUs

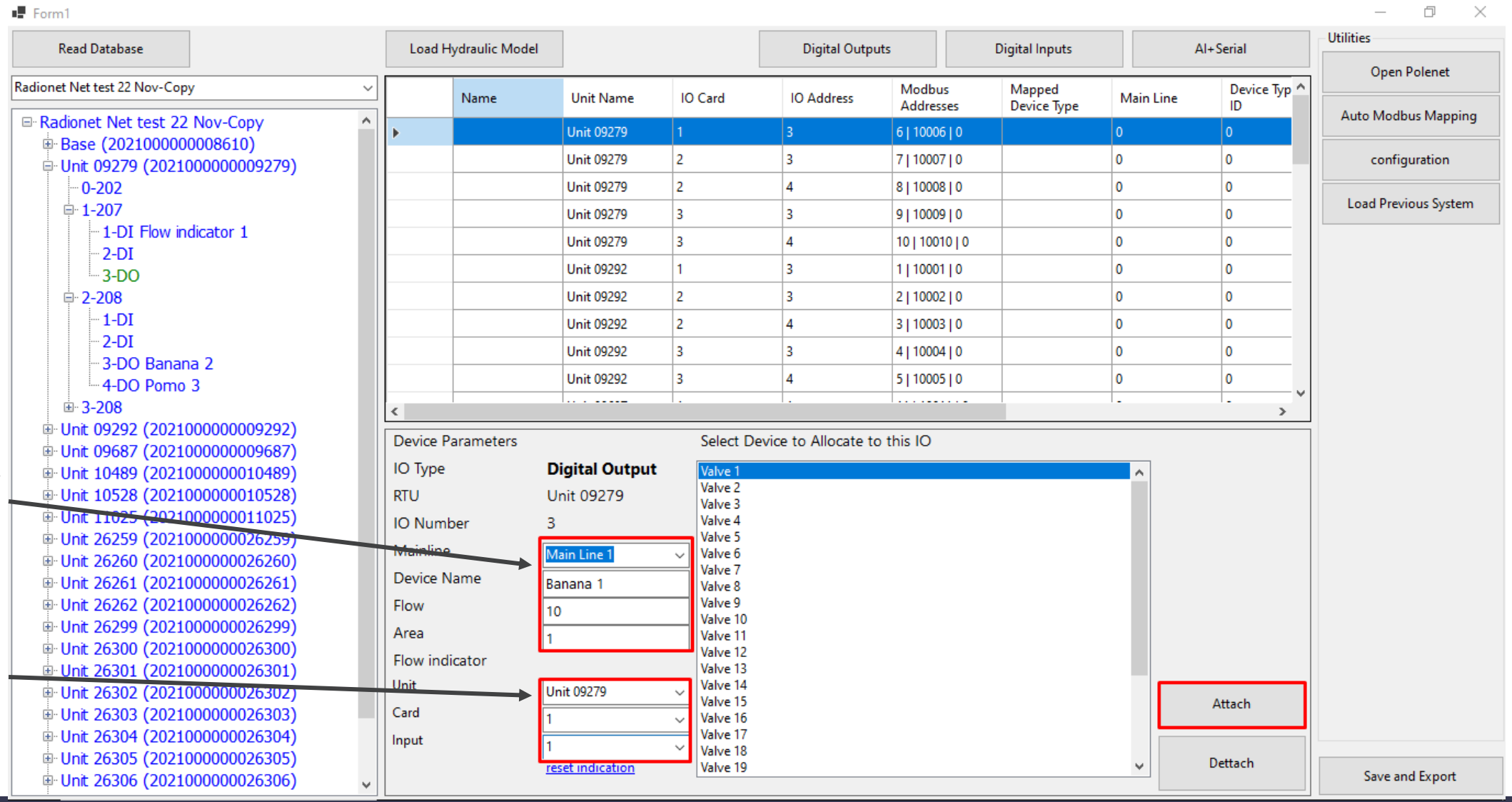


Name	Unit Name	IO Card	IO Address	Modbus Addresses	Mapped Device Type	Main Line	Device Typ ID
	Unit 09279	1	3	6 | 10006 | 0		0	0
	Unit 09279	2	3	7 | 10007 | 0		0	0
	Unit 09279	2	4	8 | 10008 | 0		0	0
	Unit 09279	3	3	9 | 10009 | 0		0	0
	Unit 09279	3	4	10 | 10010 | 0		0	0
	Unit 09292	1	3	1 | 10001 | 0		0	0
	Unit 09292	2	3	2 | 10002 | 0		0	0
	Unit 09292	2	4	3 | 10003 | 0		0	0
	Unit 09292	3	3	4 | 10004 | 0		0	0
	Unit 09292	3	4	5 | 10005 | 0		0	0

Click on any DO. This will open the window below, enter details such as Mainline, Device Name, flow, Area & Flow indicator.



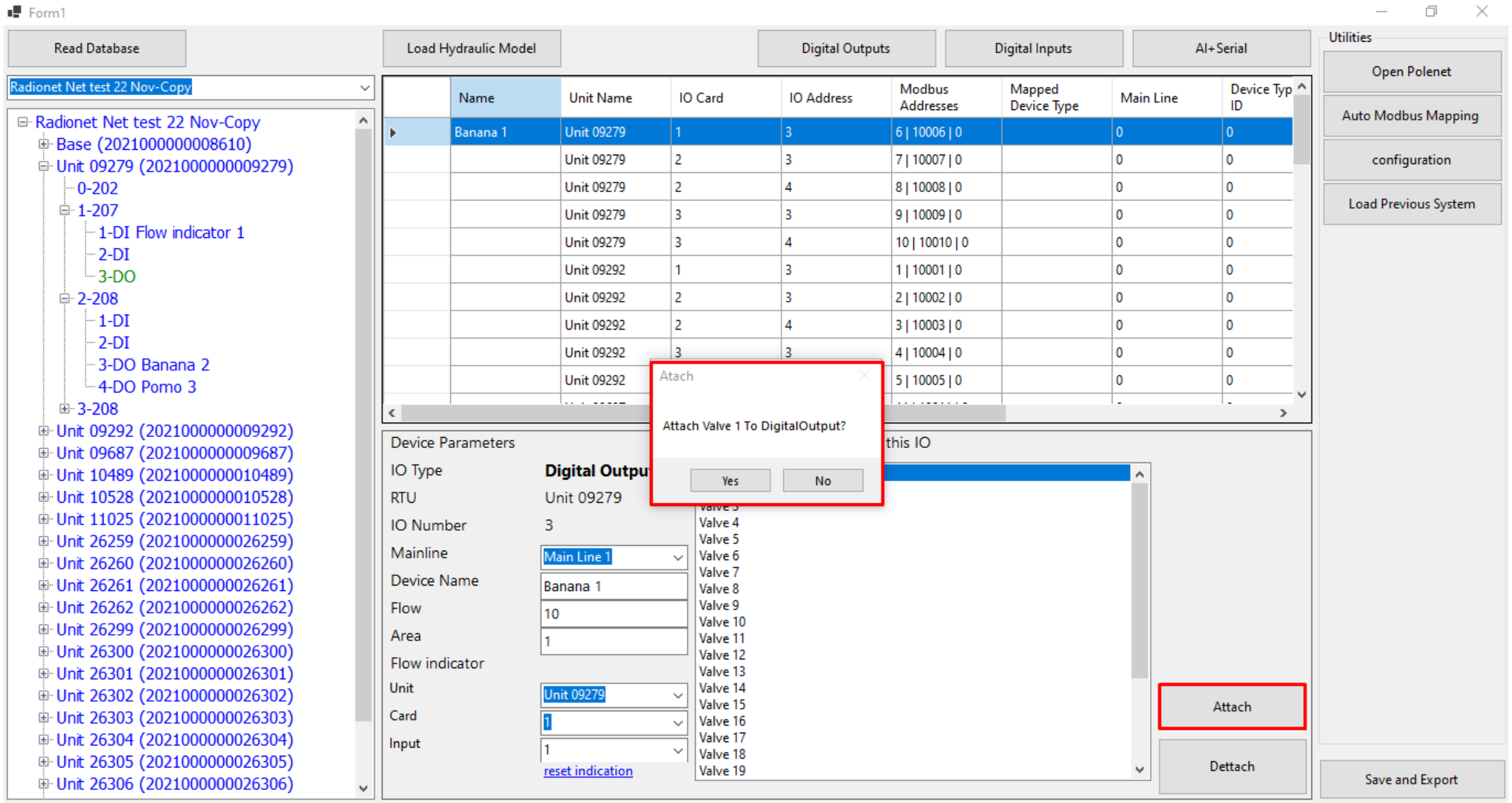
Select Device to Allocate IO . Enter Details Device Name , Flow and Area Click Attach



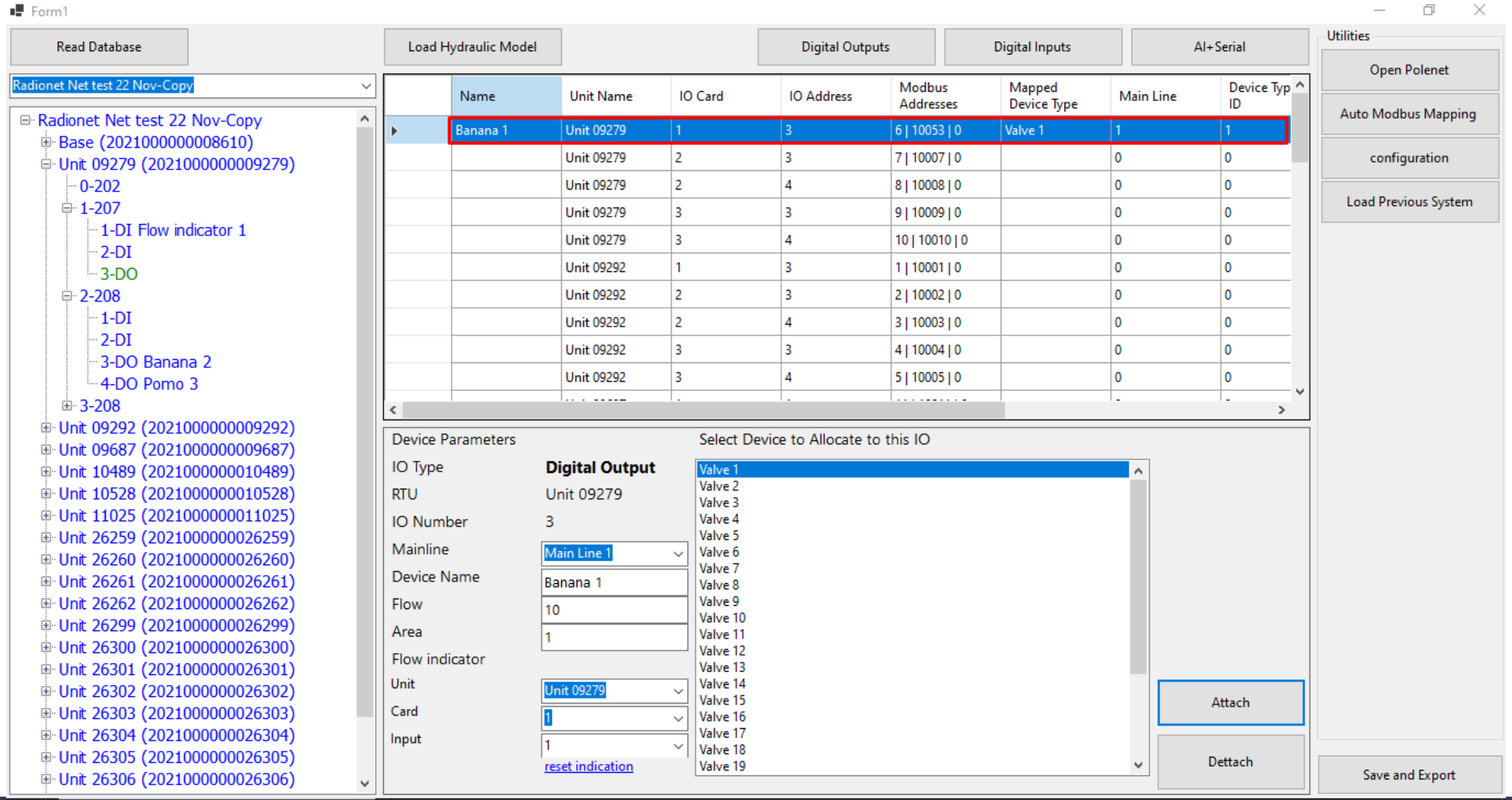
Device Name & Details

Flow Indicator : Select Unit and Input to which it is connected

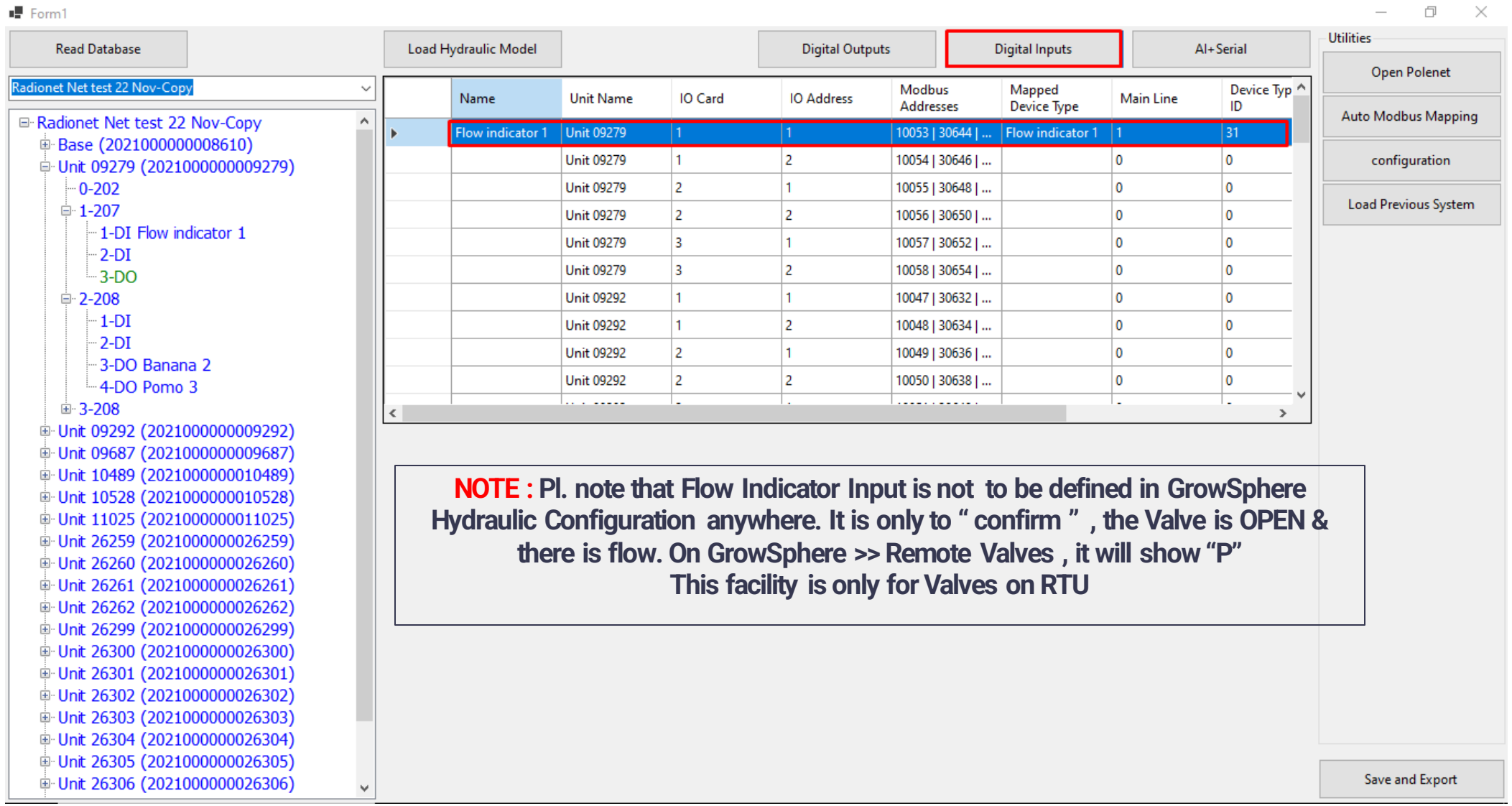
A Prompt message will appear, click Yes



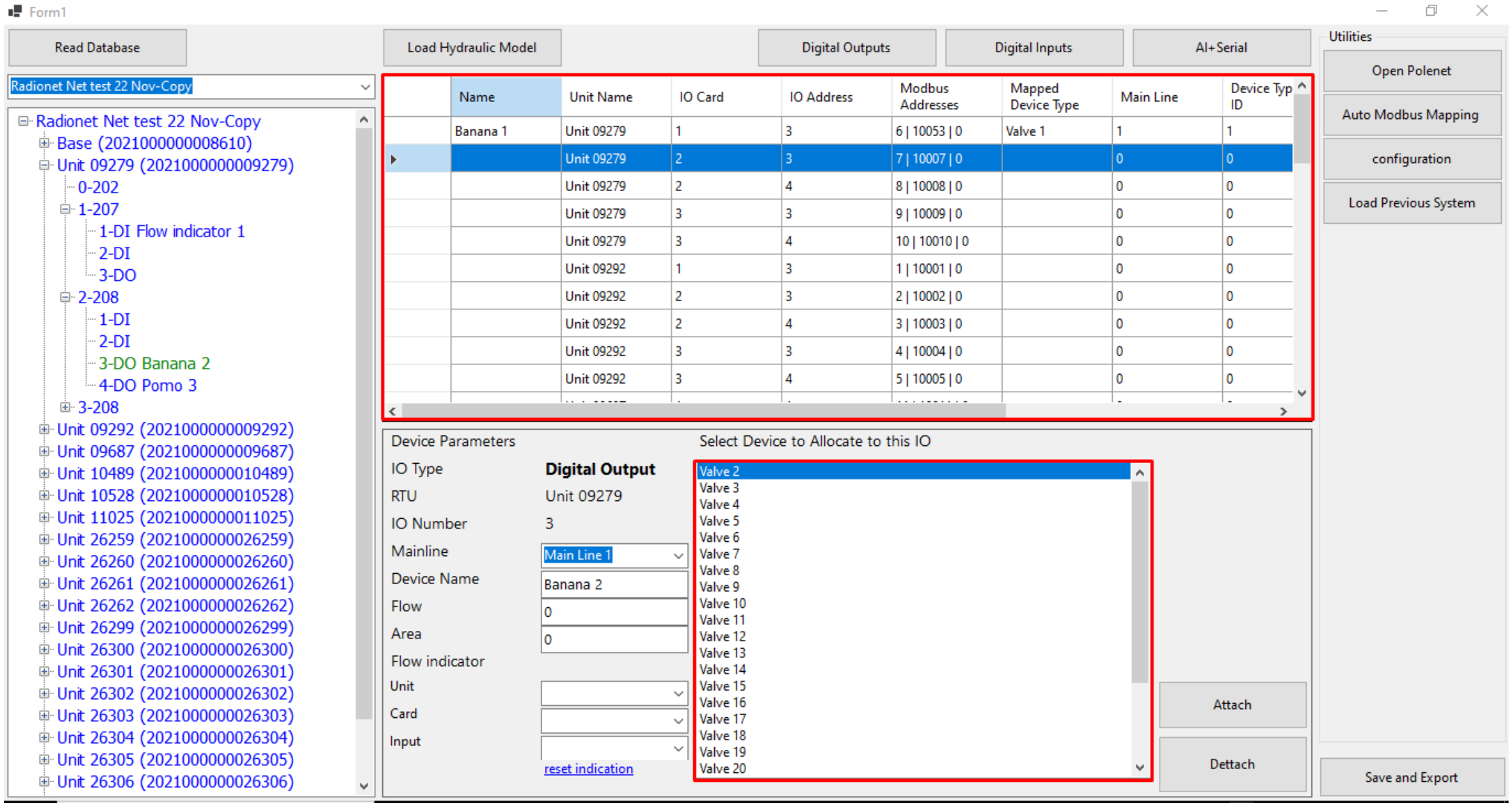
Device will be mapped to Output on RTU & will be displayed in table



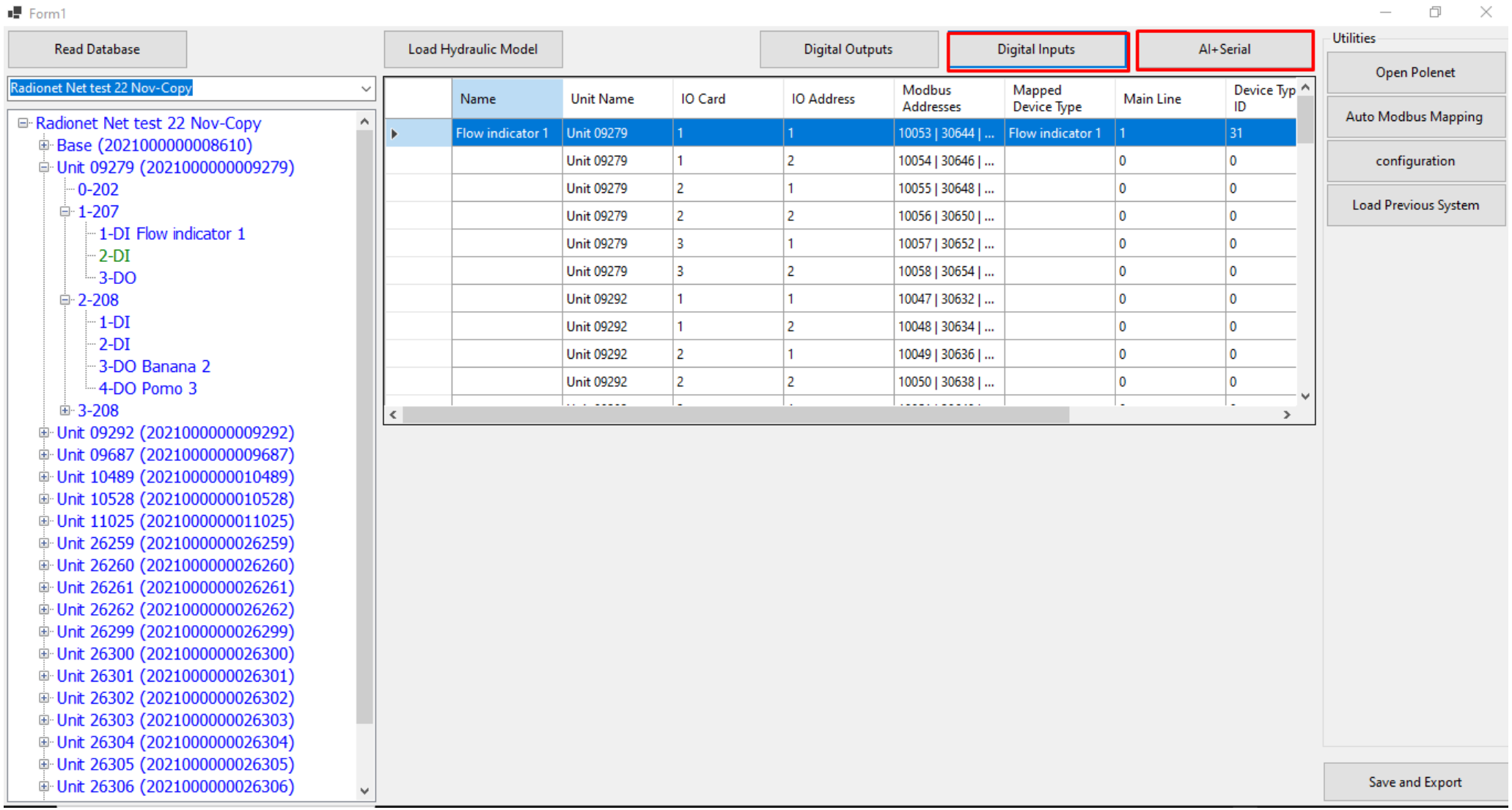
In Digital Inputs Details of flow Indicator assigned to DO can be seen here



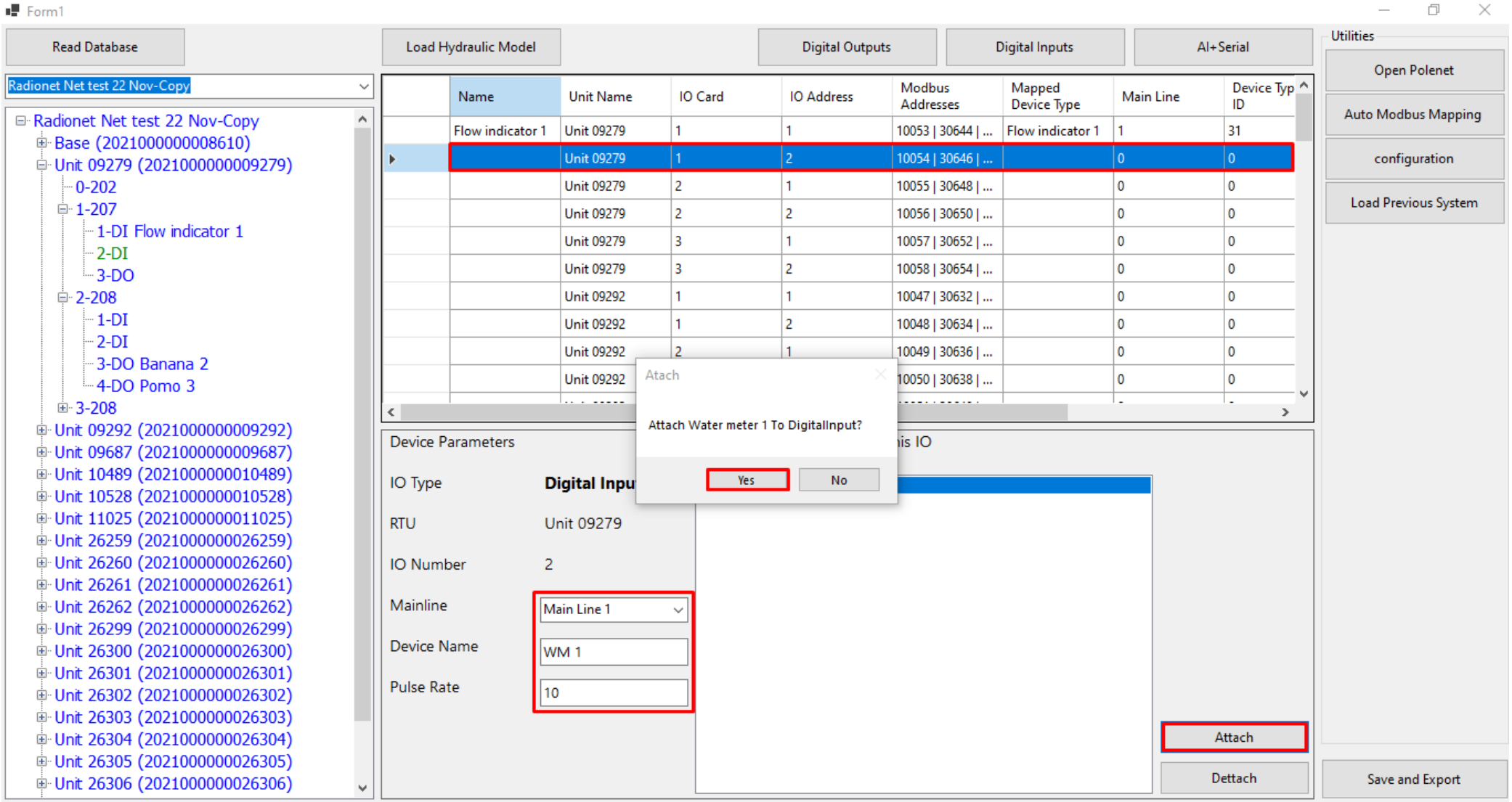
Continue mapping all Digital Outputs are connected to RTU



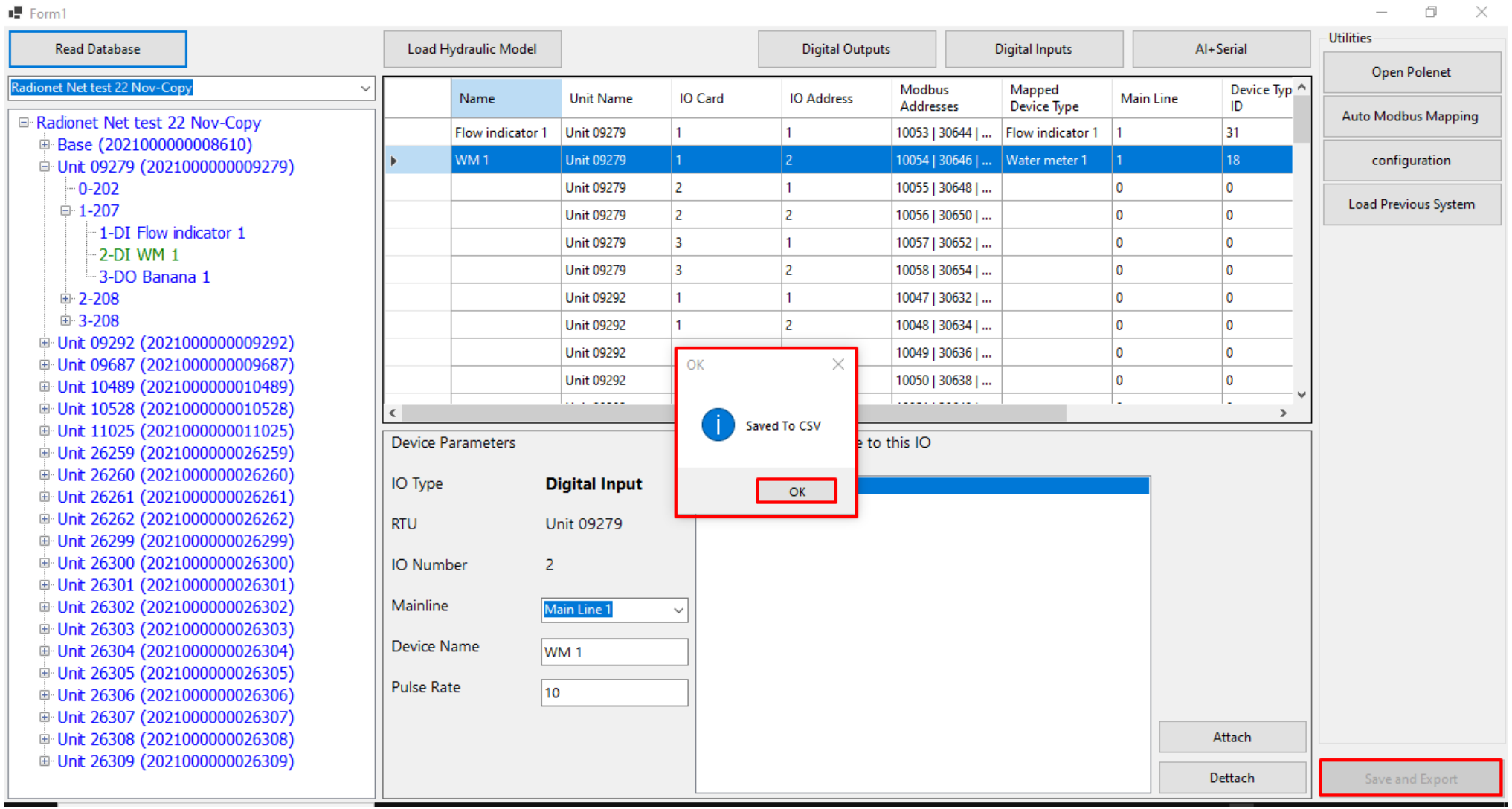
If there are Digital Input, Analog Inputs on RTU , Click on relevant Tab to assign it.



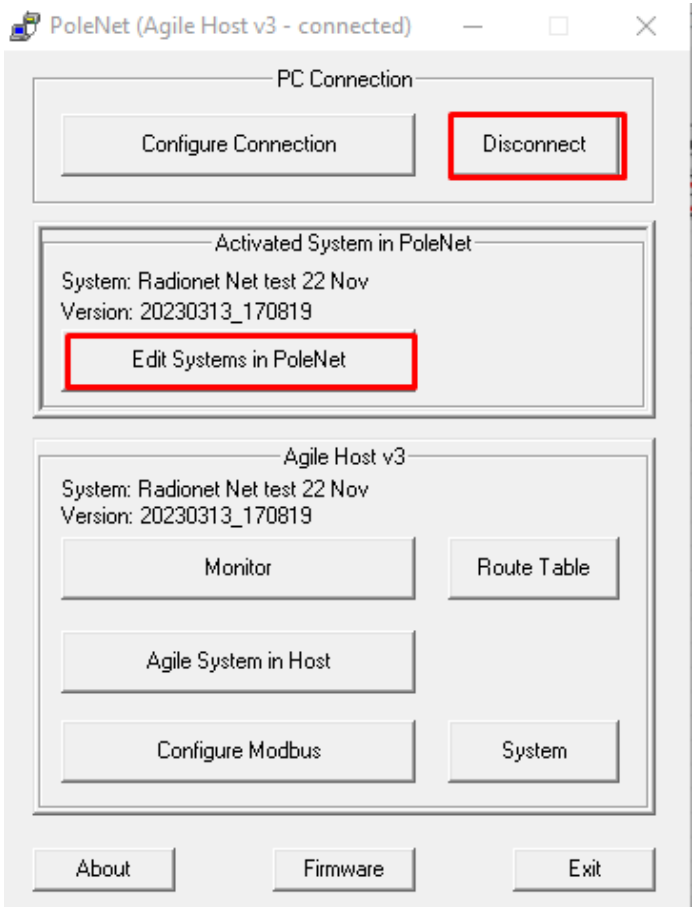
Click Digital Inputs Tab and Proceed to add Digital Input, select Mainline, Enter Device name etc, and click Attach Device Name (WM 1 here and associated with DI)

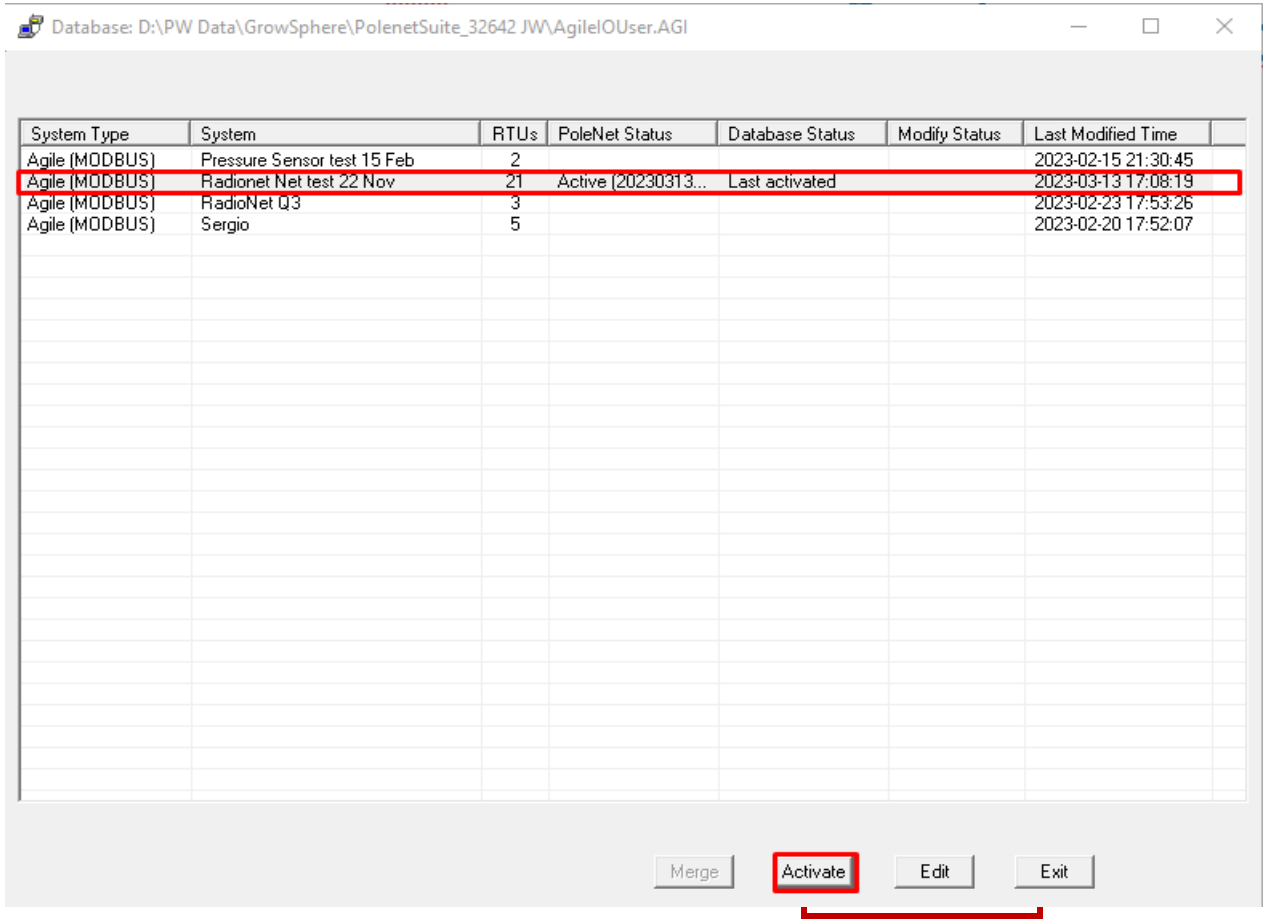


After all I/Os devices are assigned , Click “Save and Export “ .
A message will Appear “Saved to CSV”.Click OK

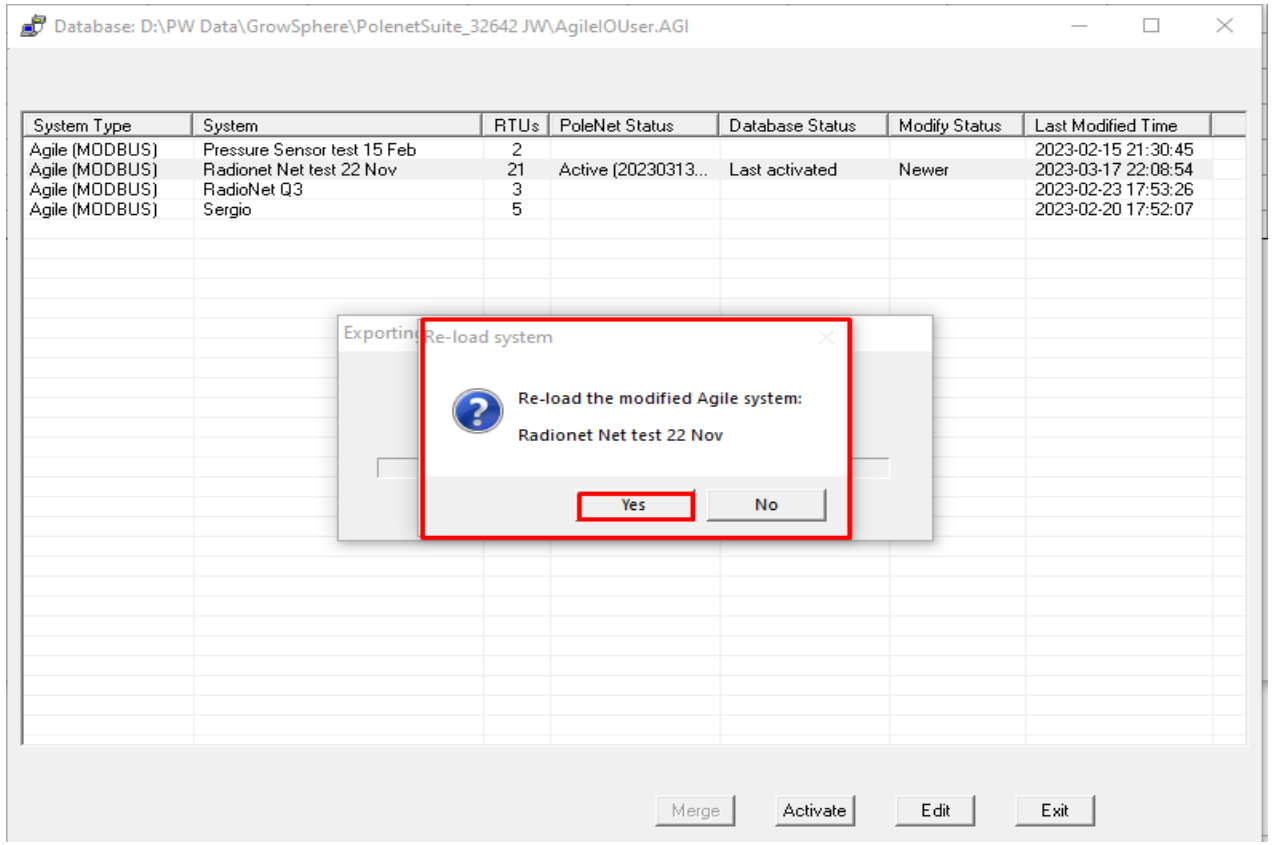


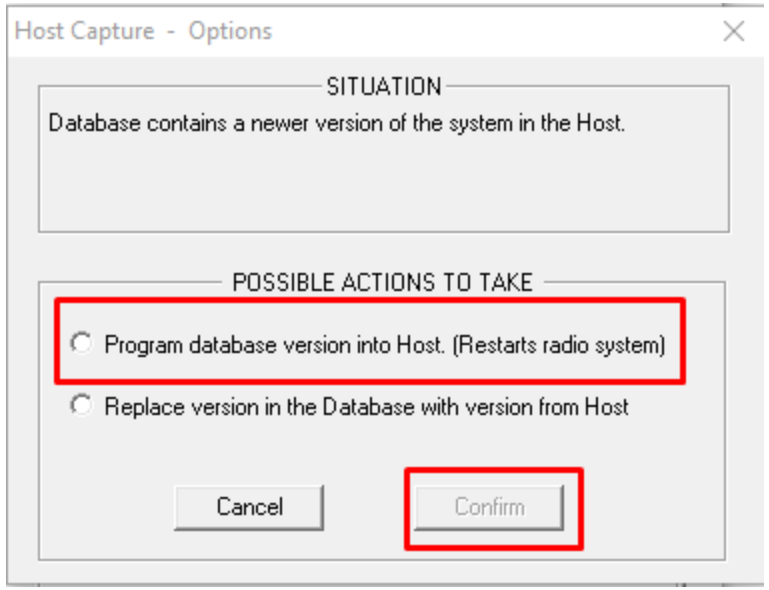
After save csv, Go to PoleNet Application & Disconnect the system. Click on “Edit System in PoleNet” & Select last activated system & Activate again & Connect PoleNet.



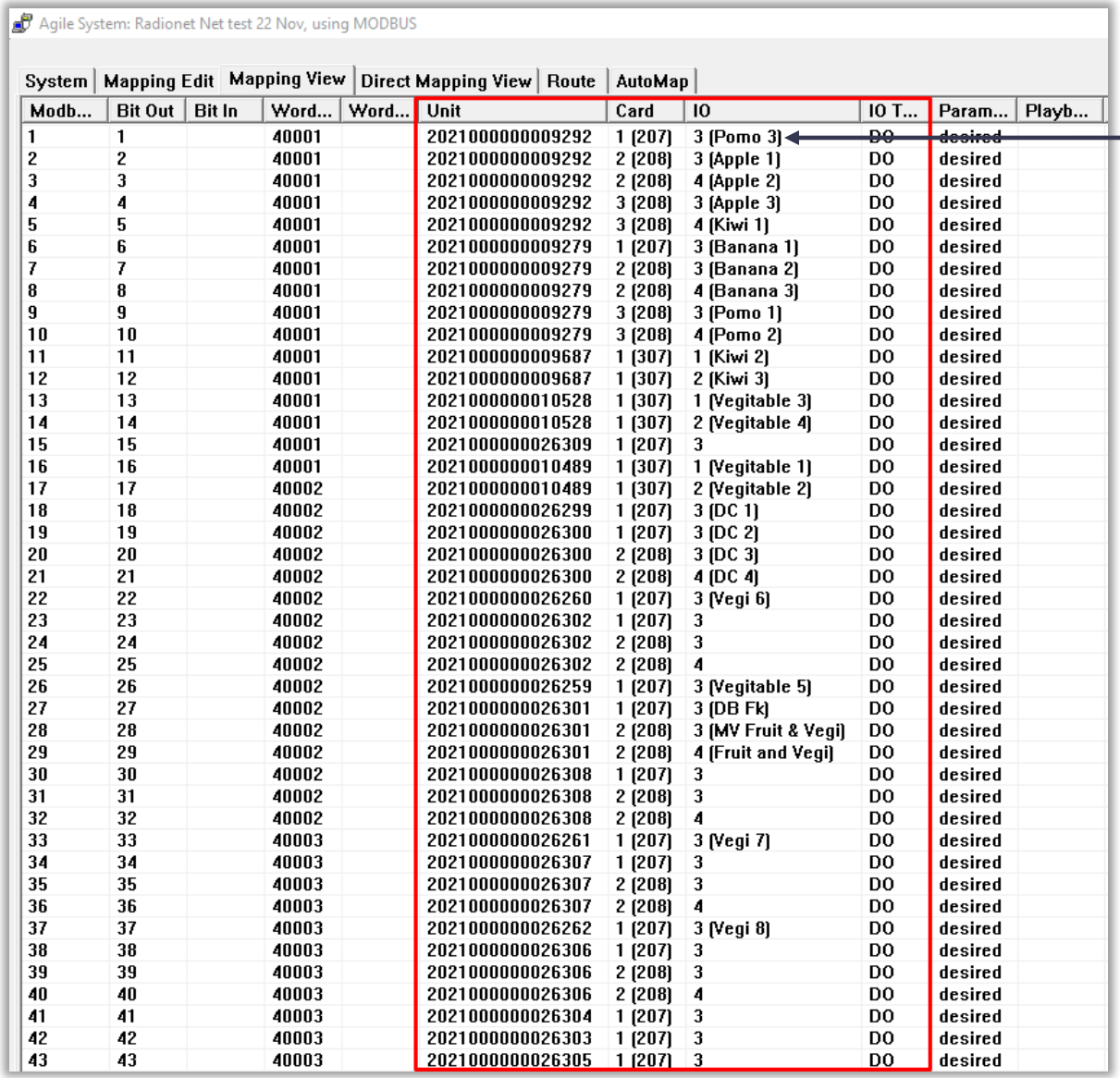


System will ask to Re-load the modified system? Click “ Yes”. Then system will ask to Select “ Program database version into Host” and Confirm





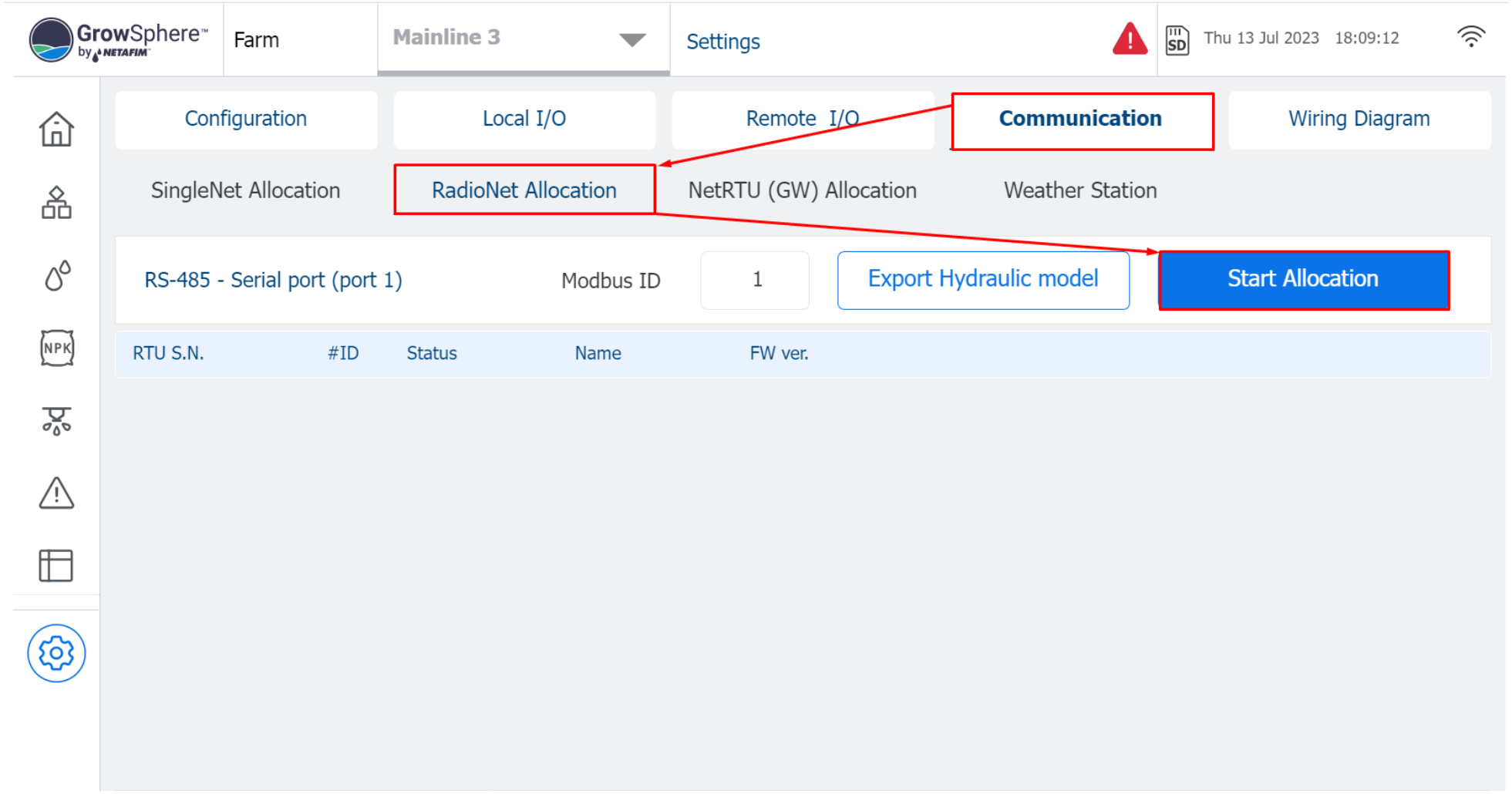
After CSV Upload able to see details in PoleNet System in “Mapping View” section.



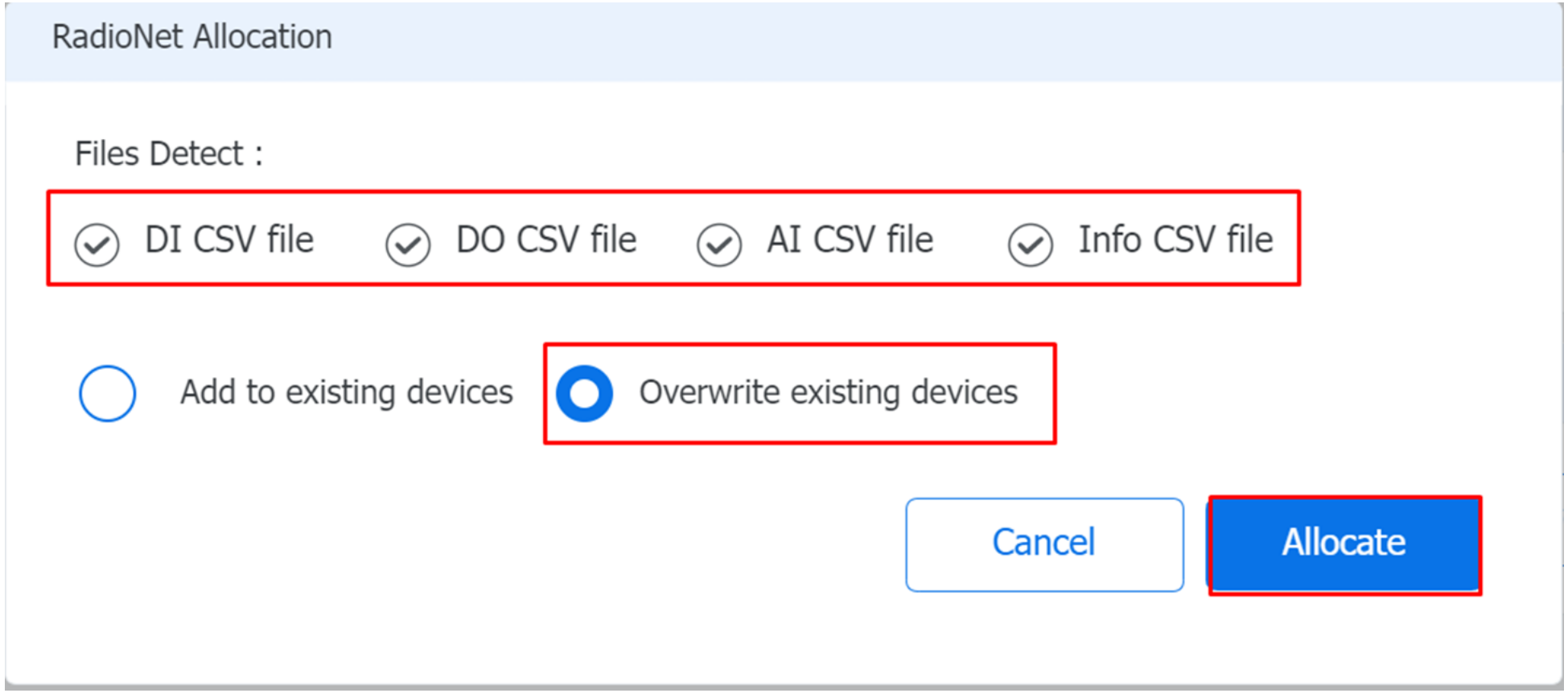
Modb...	Bit Out	Bit In	Word...	Word...	Unit	Card	IO	IO T...	Param...	Playb...
1	1		40001		2021000000009292	1 (207)	3 (Pomo 3)	DO	desired	
2	2		40001		2021000000009292	2 (208)	3 (Apple 1)	DO	desired	
3	3		40001		2021000000009292	2 (208)	4 (Apple 2)	DO	desired	
4	4		40001		2021000000009292	3 (208)	3 (Apple 3)	DO	desired	
5	5		40001		2021000000009292	3 (208)	4 (Kiwi 1)	DO	desired	
6	6		40001		2021000000009279	1 (207)	3 (Banana 1)	DO	desired	
7	7		40001		2021000000009279	2 (208)	3 (Banana 2)	DO	desired	
8	8		40001		2021000000009279	2 (208)	4 (Banana 3)	DO	desired	
9	9		40001		2021000000009279	3 (208)	3 (Pomo 1)	DO	desired	
10	10		40001		2021000000009279	3 (208)	4 (Pomo 2)	DO	desired	
11	11		40001		2021000000009687	1 (307)	1 (Kiwi 2)	DO	desired	
12	12		40001		2021000000009687	1 (307)	2 (Kiwi 3)	DO	desired	
13	13		40001		2021000000010528	1 (307)	1 (Vegitable 3)	DO	desired	
14	14		40001		2021000000010528	1 (307)	2 (Vegitable 4)	DO	desired	
15	15		40001		2021000000026309	1 (207)	3	DO	desired	
16	16		40001		2021000000010489	1 (307)	1 (Vegitable 1)	DO	desired	
17	17		40002		2021000000010489	1 (307)	2 (Vegitable 2)	DO	desired	
18	18		40002		2021000000026299	1 (207)	3 (DC 1)	DO	desired	
19	19		40002		2021000000026300	1 (207)	3 (DC 2)	DO	desired	
20	20		40002		2021000000026300	2 (208)	3 (DC 3)	DO	desired	
21	21		40002		2021000000026300	2 (208)	4 (DC 4)	DO	desired	
22	22		40002		2021000000026260	1 (207)	3 (Vegi 6)	DO	desired	
23	23		40002		2021000000026302	1 (207)	3	DO	desired	
24	24		40002		2021000000026302	2 (208)	3	DO	desired	
25	25		40002		2021000000026302	2 (208)	4	DO	desired	
26	26		40002		2021000000026259	1 (207)	3 (Vegitable 5)	DO	desired	
27	27		40002		2021000000026301	1 (207)	3 (DB Fk)	DO	desired	
28	28		40002		2021000000026301	2 (208)	3 (MV Fruit & Vegi)	DO	desired	
29	29		40002		2021000000026301	2 (208)	4 (Fruit and Vegi)	DO	desired	
30	30		40002		2021000000026308	1 (207)	3	DO	desired	
31	31		40002		2021000000026308	2 (208)	3	DO	desired	
32	32		40002		2021000000026308	2 (208)	4	DO	desired	
33	33		40003		2021000000026261	1 (207)	3 (Vegi 7)	DO	desired	
34	34		40003		2021000000026307	1 (207)	3	DO	desired	
35	35		40003		2021000000026307	2 (208)	3	DO	desired	
36	36		40003		2021000000026307	2 (208)	4	DO	desired	
37	37		40003		2021000000026262	1 (207)	3 (Vegi 8)	DO	desired	
38	38		40003		2021000000026306	1 (207)	3	DO	desired	
39	39		40003		2021000000026306	2 (208)	3	DO	desired	
40	40		40003		2021000000026306	2 (208)	4	DO	desired	
41	41		40003		2021000000026304	1 (207)	3	DO	desired	
42	42		40003		2021000000026303	1 (207)	3	DO	desired	
43	43		40003		2021000000026305	1 (207)	3	DO	desired	

Refer to Earlier Slides for name of the IO device

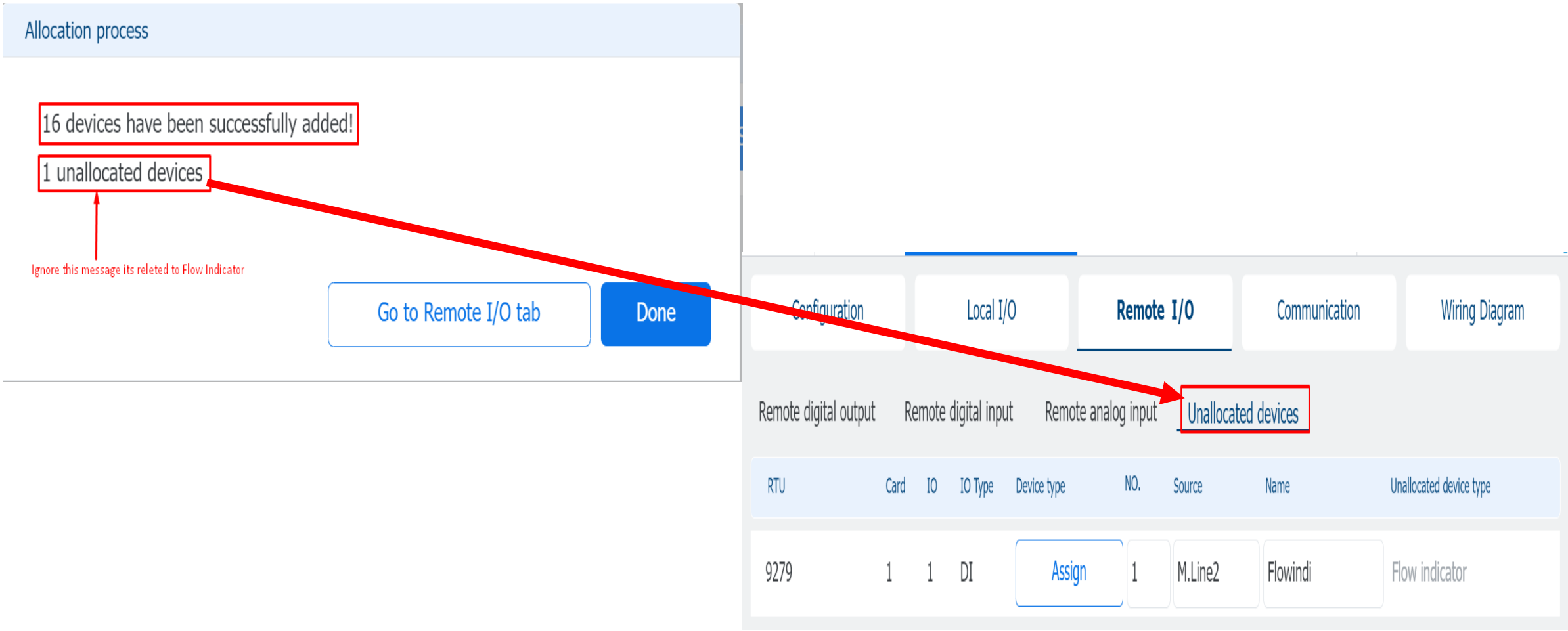
Go to GrowSphere Screen , Under “Communication” select “RadioNet Allocation” and click on “Start Allocation”



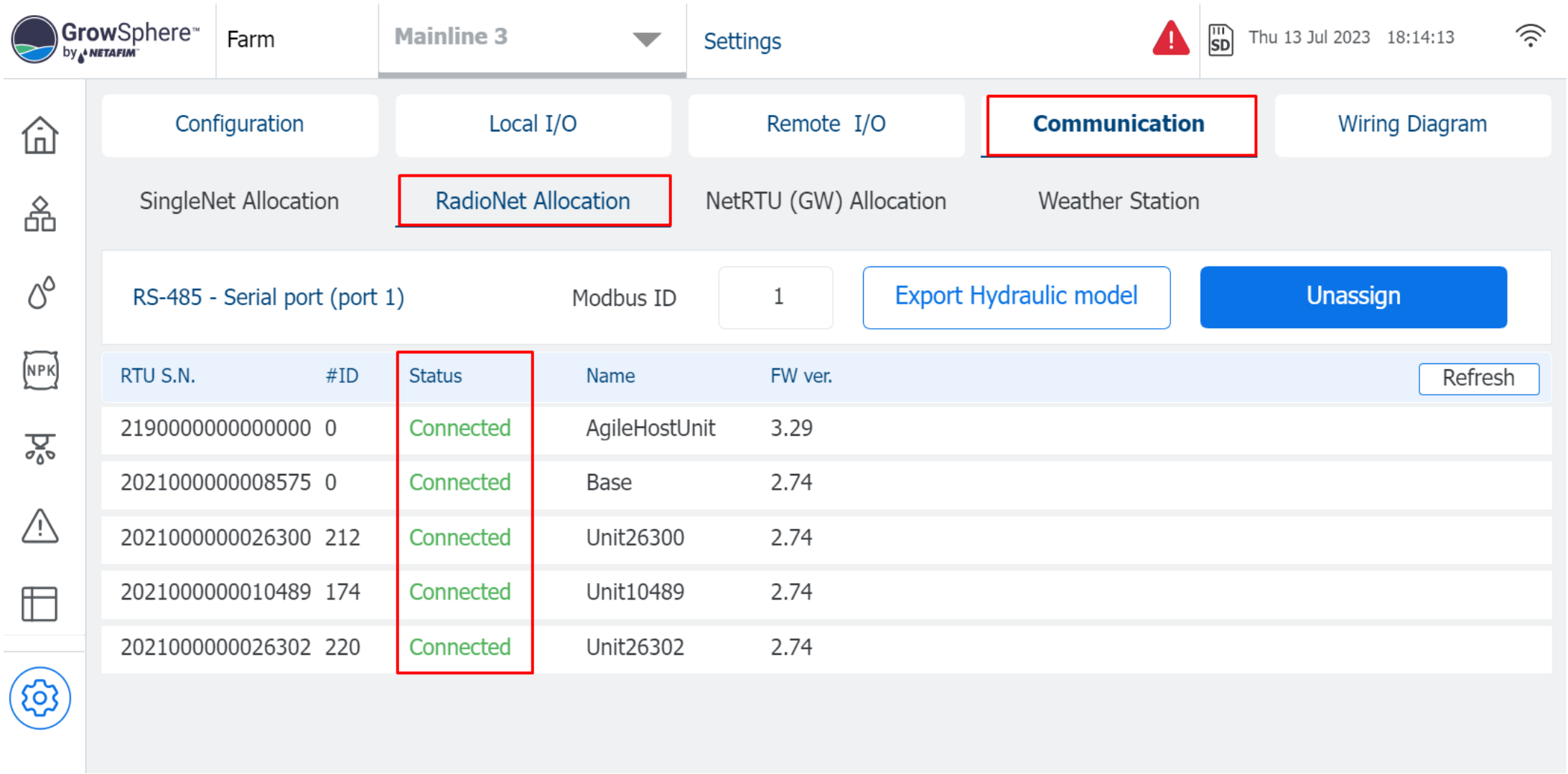
Confirm all CSV files are detected. Click on “ Overwrite existing devices.



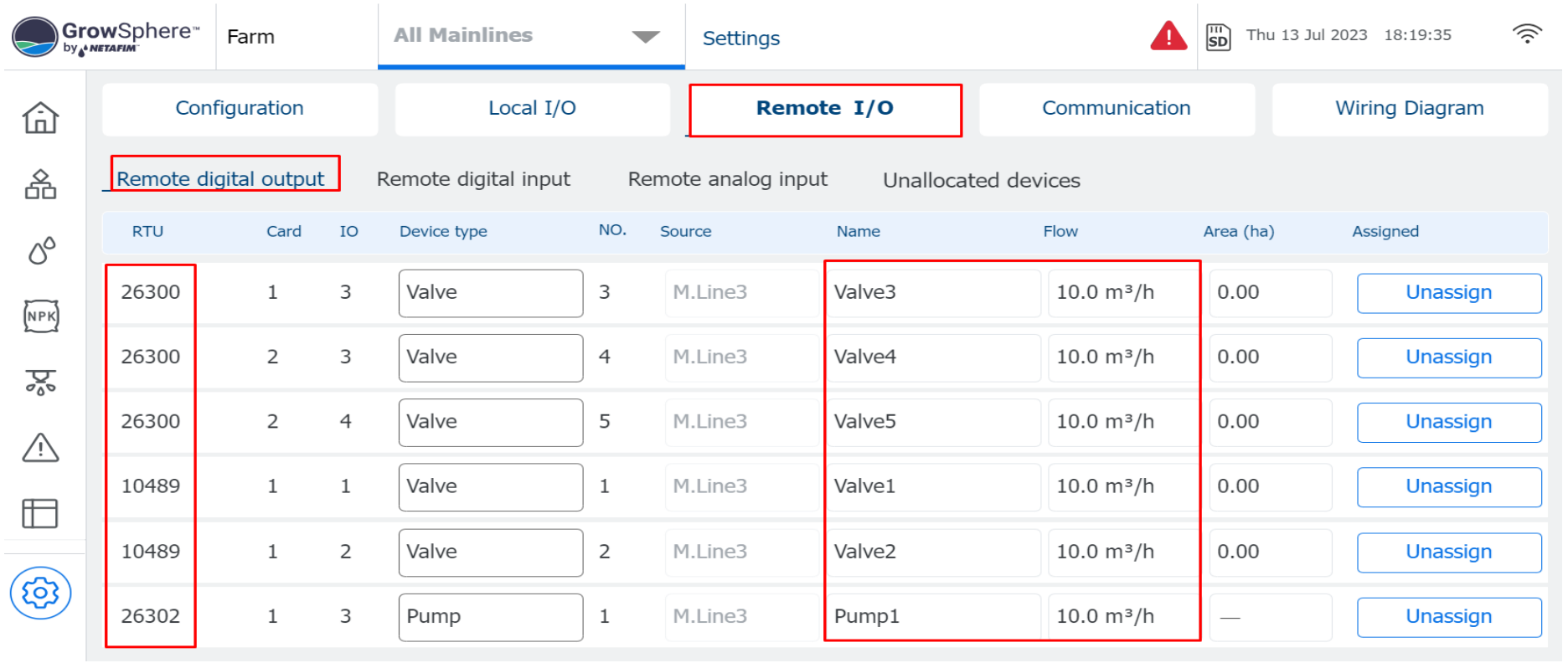
After allocation process , all devices successfully added. Click on “Go to Remote I/O Tab”



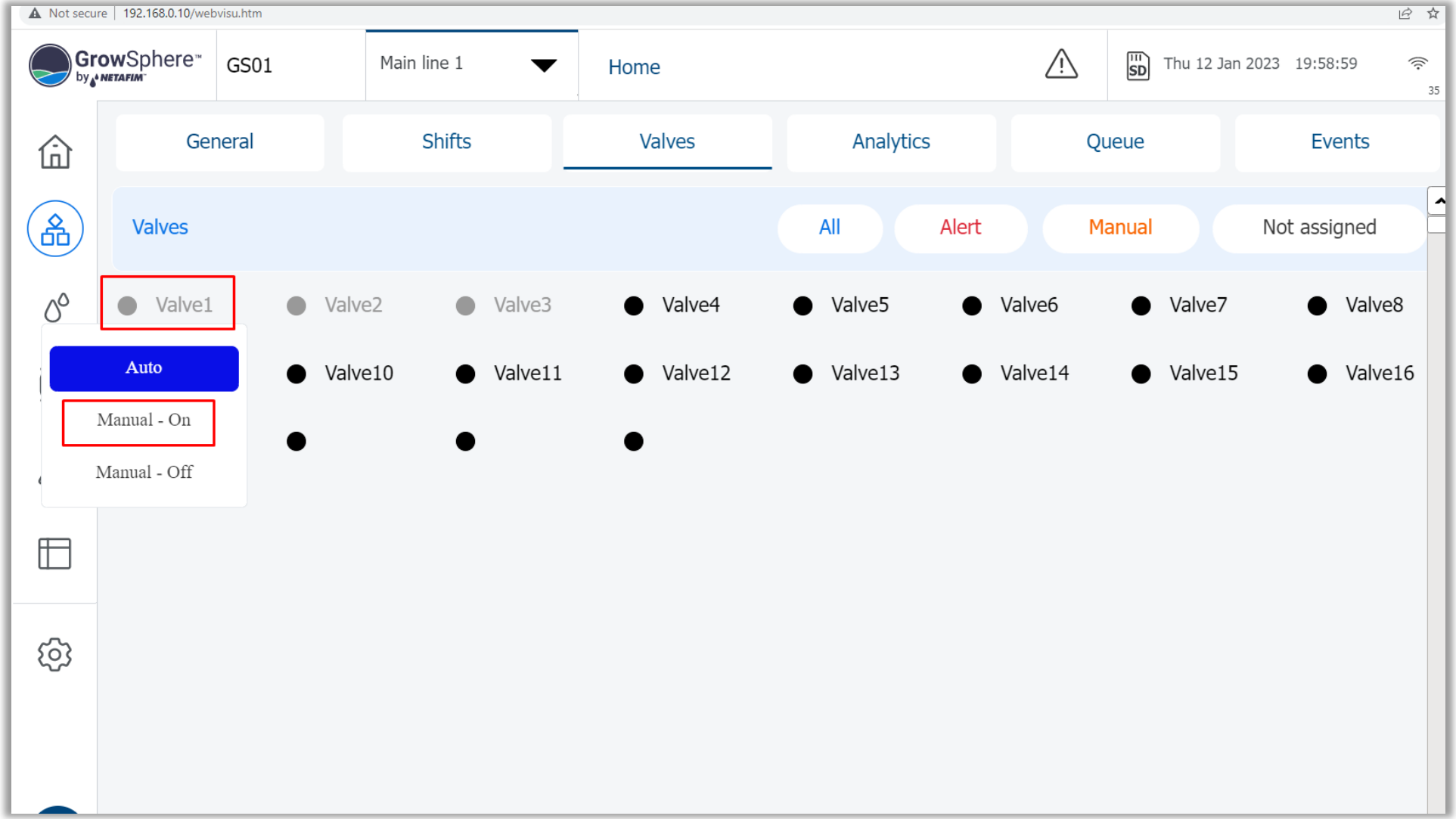
After Allocation done, we can see the RadioNet RTU Status.



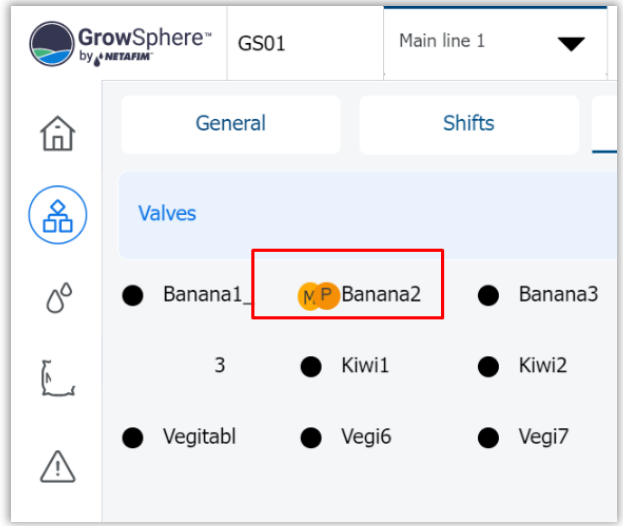
Check all I/O s are appeared.

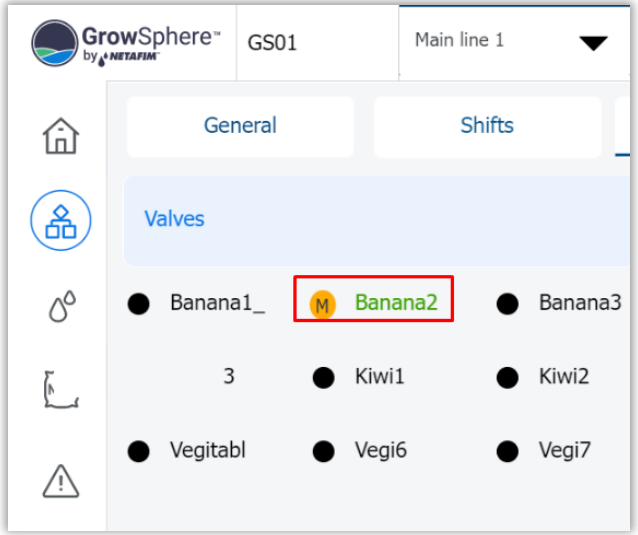


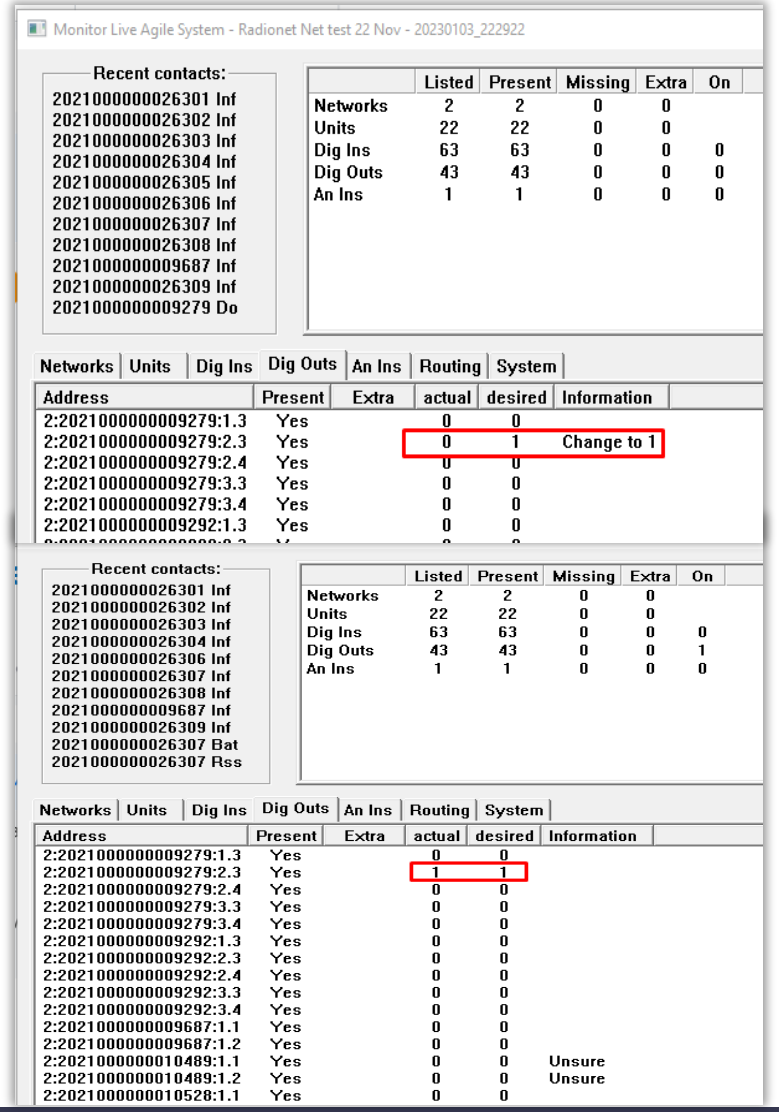
To test Valve operations from UI.
Click on any Valve and Click on “Manual On”



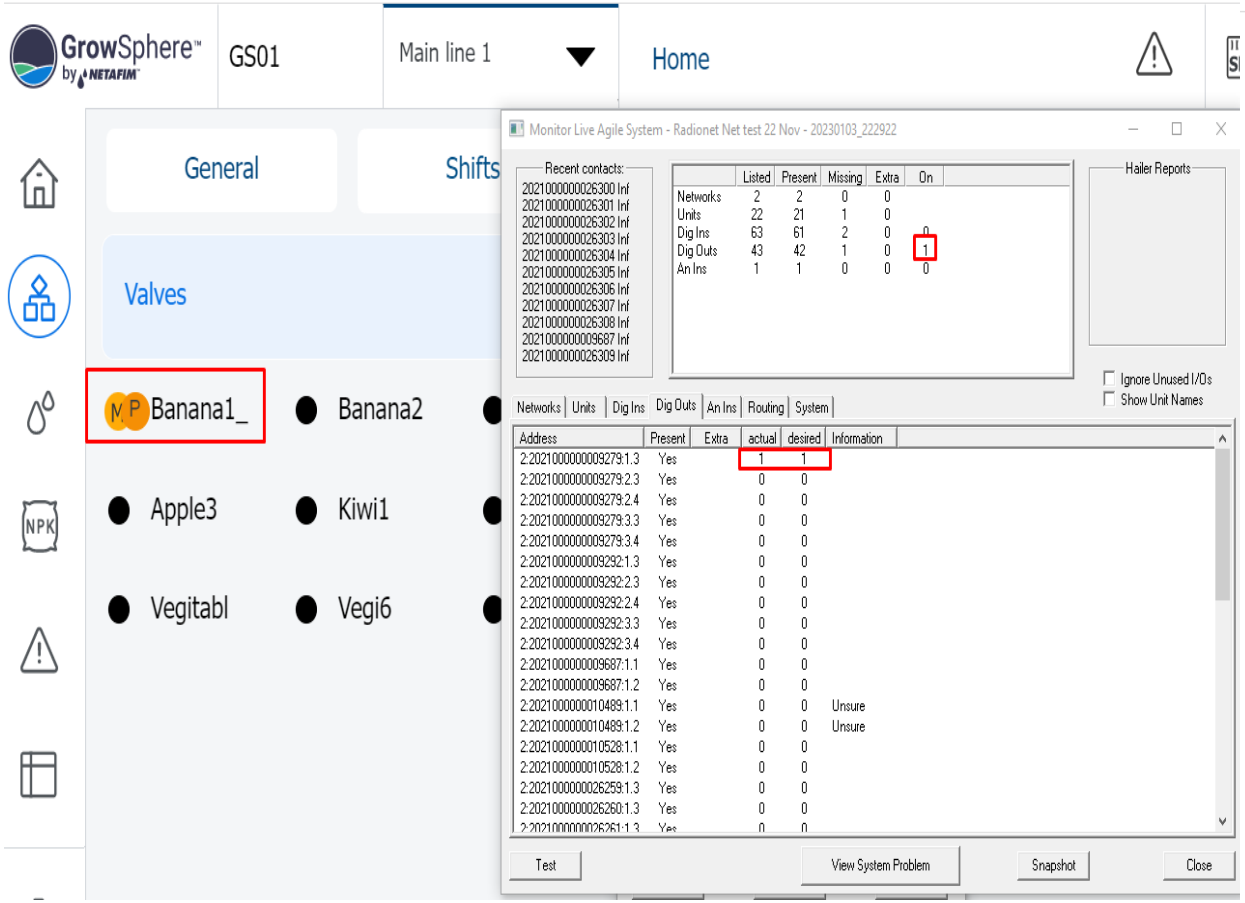
Check Valve state is changed to " M"(Manual) & "P"(Pending). "P" will disappear, Valve will turn Green when Status Changes to 1 in PoleNet

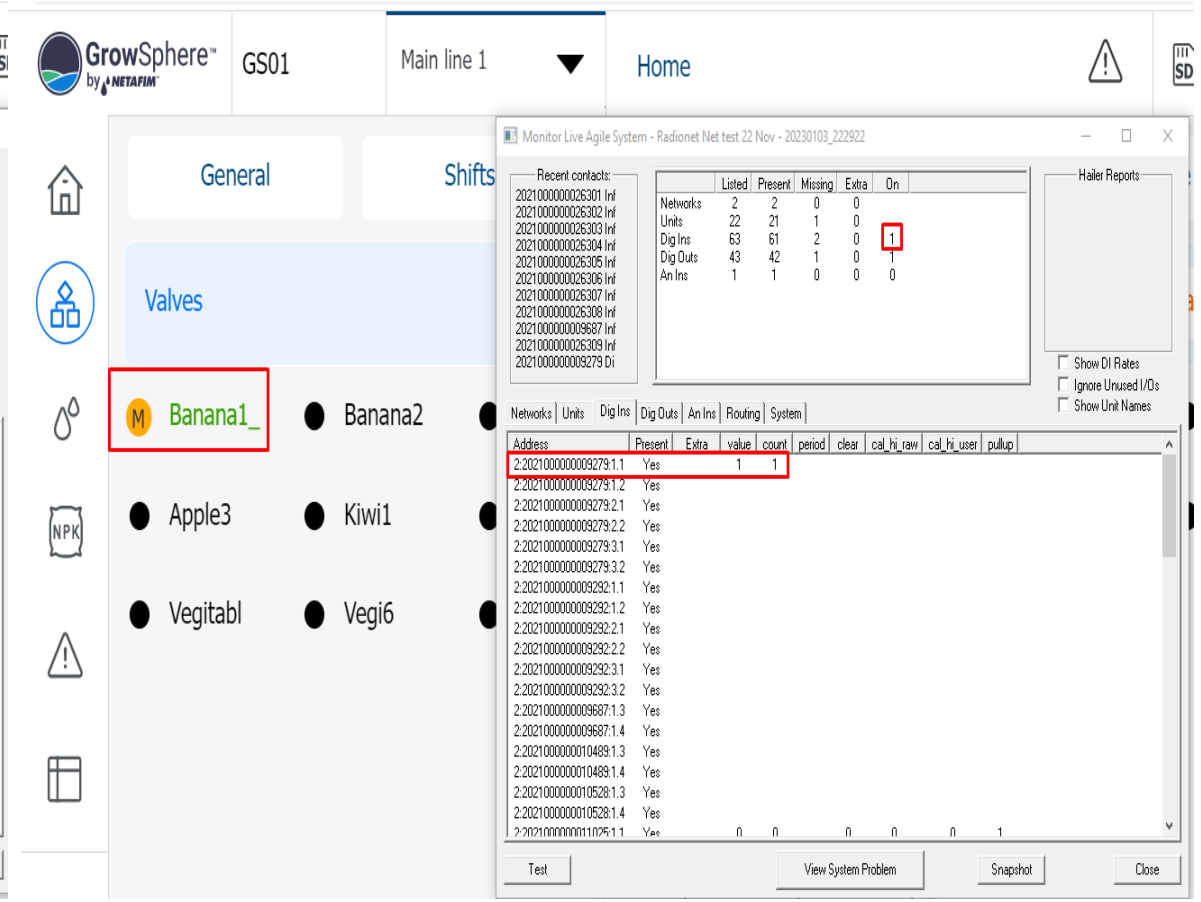




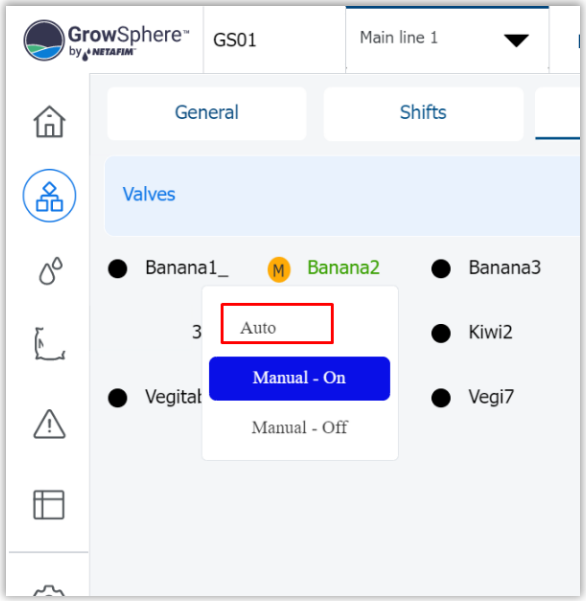


“M”(Manual –ON) Valve which is associated with Flow Indicator “P” (Pending) sign will be disappeared when flow indicator switch “ON”

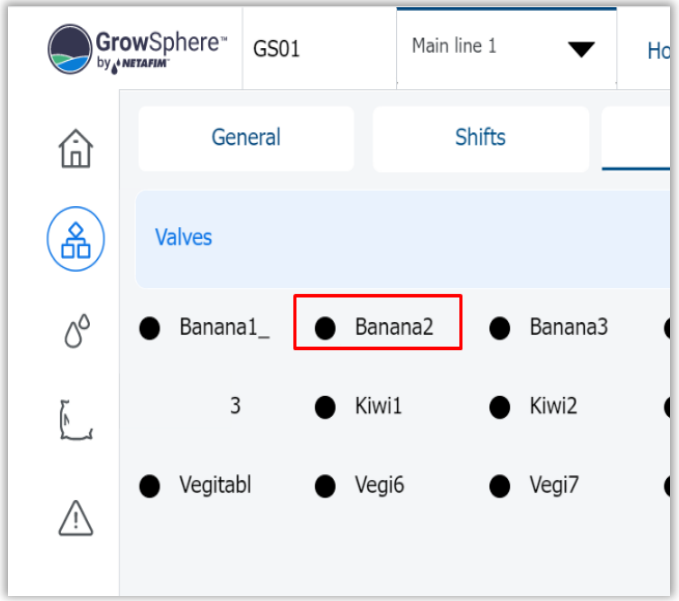


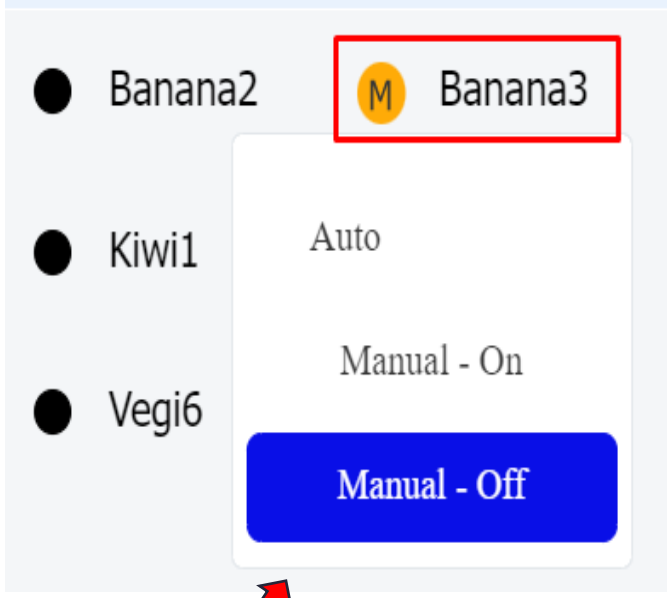


To Close Valve Click on " Auto" or Manual- Off



Confirm in PoleNet accordingly.





Note : If "Manual –OFF" is chosen, Valve will not open in AUTO mode. Need to Select " AUTO " to make it active. "M" against the Valve name in Black is the indication of Manual OFF .


GO FOR IT !