Siemens Accesspoint configuration

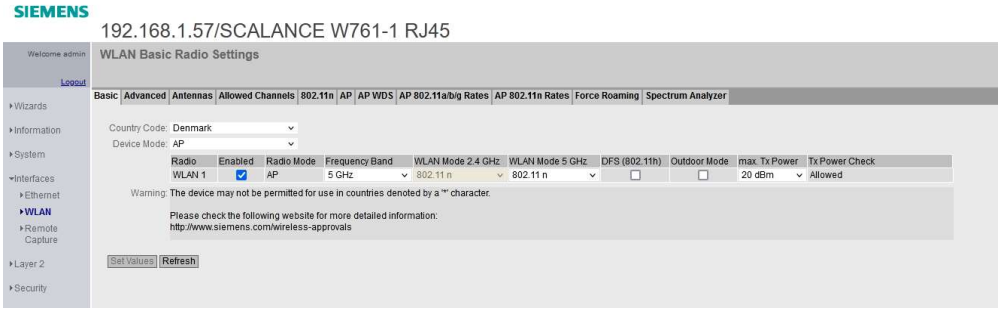
In this example the Siemens Scalance W761 is used.

The PLC is configured to the subnet 192.168.1.xxx and is connected to one of the wired ethernet ports on the accesspoint.

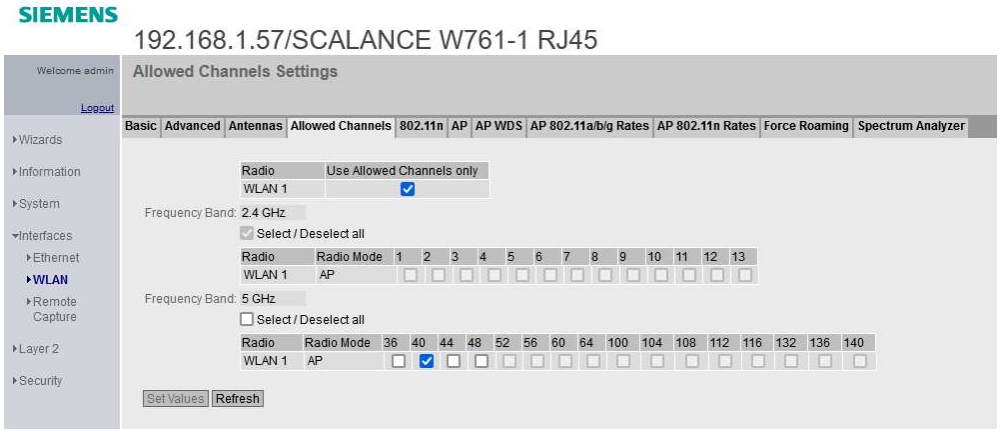
The configuration of this accesspoint is done from the internal web browser.

The wired ethernet ports must match the subnet 192.168.1.xxx on which the PLC is connected

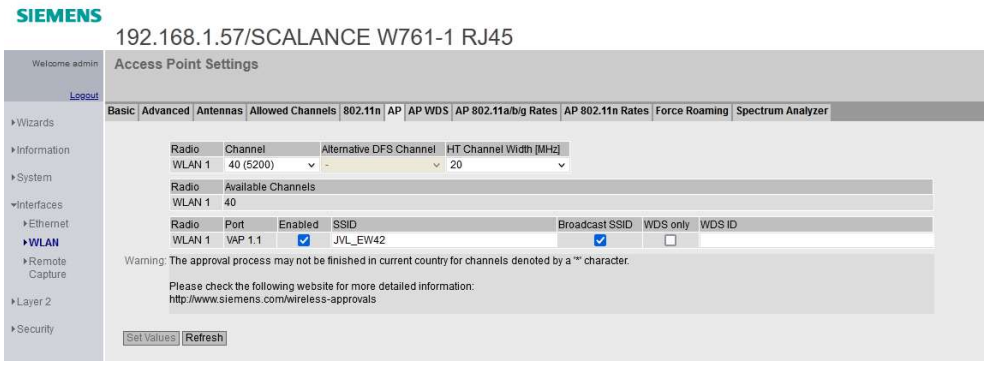
Basically the Siemens Scalance W761 is configured as an Accesspoint with the following settings:



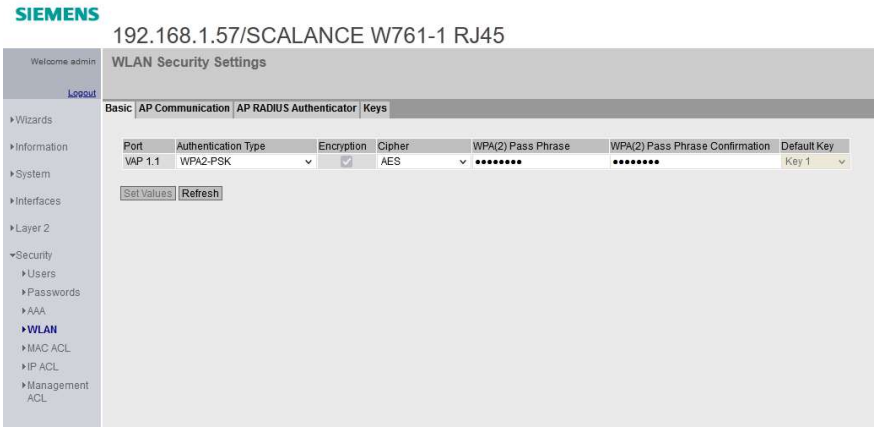
Device mode: AP (Accesspoint), 5GHz



Channel: 40 @ 5GHz



SSID: JVL_EW42



Authentication: WPA/WPA2, Password: “MONKEY123” password is obviously not visible from the web dialog.

Motor configuration

The motors are completely factory defaulted with stock settings. The initial settings are done from the mainroutine using the input and output assembly.

Wifi configuration in the motors

Note, the wifi setting must follow the settings configured in the external accesspoint, that the PLC is connected to.

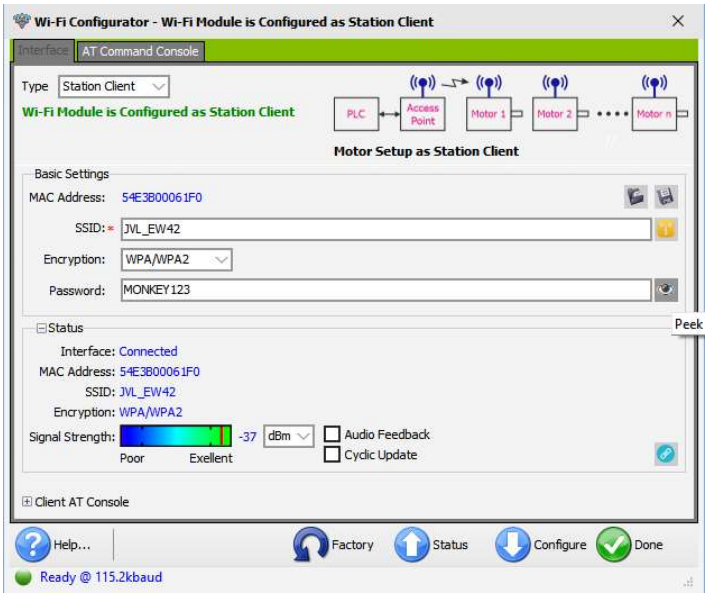
For this example we have used the Siemens scalance accesspoint configured as follows:

SSID: JVL_EW42

Encryption: WPA/WPA2

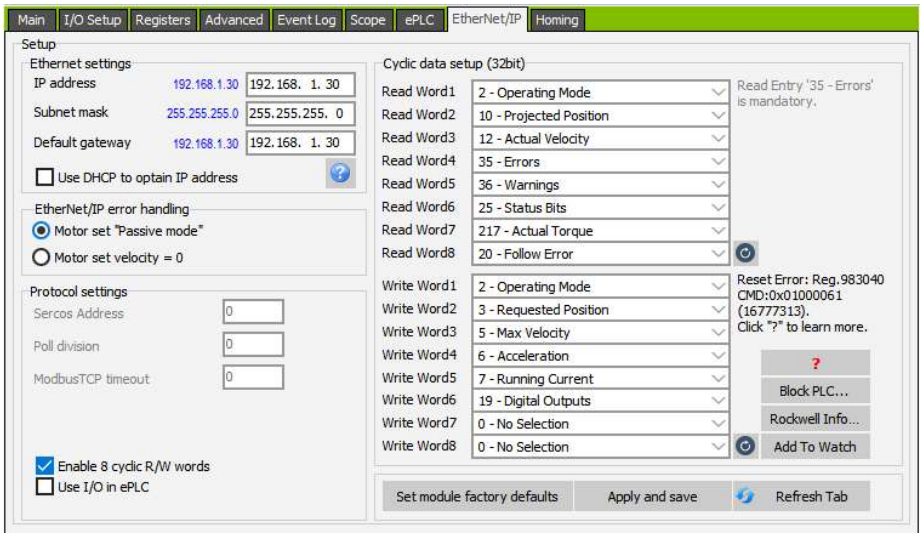
PW: MONKEY123

Please note, that the Siemens scalance in this example is in fact configured as an accesspoint, so the motors will both need to be configured as "Station Client".



EthernetIP Configuration from MacTalk,

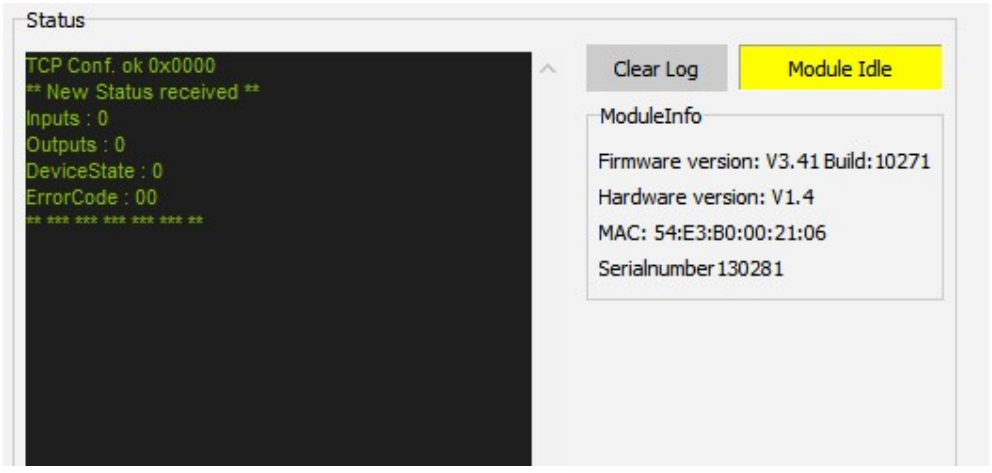
note the IP address for the motors are 192.168.1.20 and 192.168.1.30, which follows the subnet of the PLC and the wifi connection.



Note that the 8 cyclic I/O's are configured to hold the typical used registers for normal operation.

Make sure that both motors are configured as described above.

The status of the EthernetIP connection can be seen from MacTalk on the "EthernetIP" -tab.



The yellow LED will go green as soon as the EthernetIP connection is established to the PLC.

Studio5000 project

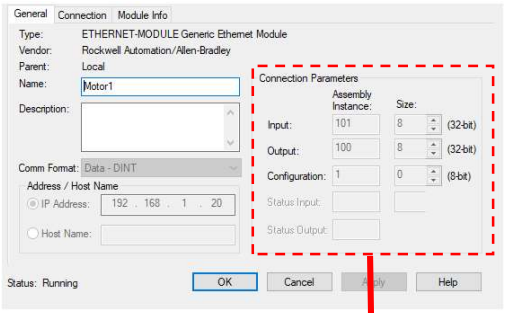
The project is kept as simple as possible for the main purpose of demonstrating the wireless capabilities. In principle there are no differences in the handling of the communication between running wireless and normal wired ethernet, however some important points needs to be considered.

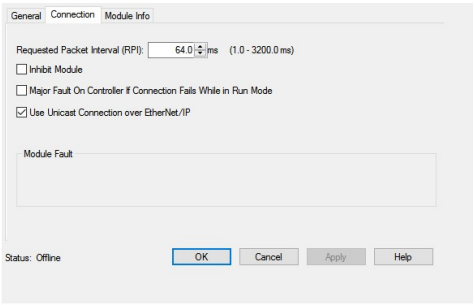
1. RPI of the communication
2. In case of lost communication (temporary or permanent), which actions needs to be taken.

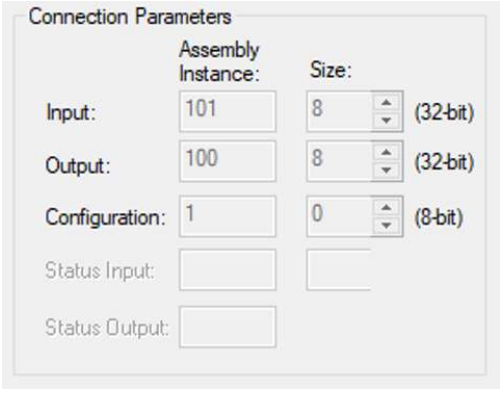
Since the accesspoint used is a Siemens product (Siemens Scalance W761), the configuration of this is held outside of the Rockwell project and is beyond the scope of this example, only the basic settings will be discussed.

In the Example the RPI is set for 64ms for both motors which ensured a reliable connection. This value will depend on the actual application.

Configuration of the motors in Studio5000







Notice the configuration of the assembly instance which follows the configuration in MacTalk with 8 cyclic input and output registers.

Mainroutine

The mainroutine is very basic with basic initialization in the first 3 rungs.

Both motors are setup with the following parameters in rung 1-3.

Mode (Cyclic write word 1): Position

Requested velocity (Cyclic write word 3): 20000 = 200RPM

Requested Acceleration (Cyclic write word 4): 1000

Max. Torque (Cyclic write word 5): 511 = 100%

The rest of the main routine is a simple statemachine positioning the motors between position = 0 and Position = 4096000 with a small delay in between. The position is read back to decide when to move to the next position. The actual position is read from read word 2 Actual position.