



## Using Modem Enabled Drivers

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### Using Modem Enabled KEPServer communication drivers

These are the steps that you should follow to establish modem communications:

1. Configure the PLC or device to communicate using a 10 bit format (format of most modems). An example is that if you have a device that speaks Modbus RTU and uses the following parameters: 8 data bits, EVEN parity, 1 stop bit; it will not work with a 10 bit modem because the sum of the parameters is  $8+2+1 = 11$ . You need to adjust either the number of data bits or parity such that the sum of the bit usage of the parameters is not greater than 10. For the example given above you would want to adjust the parity to NONE.
2. Create a KEPServer project and establish a direct connection to your device using the parameters configured in step 1. Do this to confirm that the device id and communication parameters (10 bit format) are correct before you attempt a modem connection.
3. To use a modem you need to configure a modem with the operating system. Modems can be configured through control panel settings. Consult your Windows and Modem documentation on how to set up your modem.
4. Once the modem has been properly installed, you can enable its use with KEPServer. Edit the Channel properties of your KEPServer project and enable 'Modem Use' on the Communications tab. Next, select the Modem tab and choose your modem. After selecting the modem, edit the Properties and choose a COM port and connection speed from the General tab. To establish communications it is recommended that you choose a connection speed that matches the baud rate of the PLC. Now select the Connection tab, you will need to set the Connection preferences to match the 10 bit format of your PLC. Now select the Advanced button and set the appropriate Error and Flow control settings. Check the driver help file for the driver that you are using to verify these Connection and Advanced settings.
5. At this point your Initiate Modem should be setup properly, now you need to configure the Receive Modem. Most modems are configured as initiate modems when they are sent from the factory, so you will probably need to enable Auto Answer and set the number of rings before picking up. The next step is **Very Important !!!** Use a Terminal program (like HyperTerminal) to connect to the modem using the 10 bit format of your PLC. If you do not connect to the Receive Modem using the same 10 bit format of your PLC and Initiate Modem, you will probably not be able to establish communications with the PLC through the modem connection. You can use this Terminal connection to display the active profile of your Receive Modem and compare the profile to the one listed in the driver help file. After you communicate with the PLC through the modems, it is a good practice to save the active profile of the Receive modem to flash ram. This way your modem will retain configuration after being reset.
6. At this point your Initiate and Receive modems should be setup correctly. Now you need to look at your cable connection between the Receive modem and the PLC. If your direct connection uses a null modem then you will probably need to remove the null modem for the modem connection. If your direct connection doesn't use a null modem, then you will probably need to add a null modem to your

modem connection. An effective way to test this connection is to have a 9 or 25 pin null modem connector to insert between the PLC and Receive Modem.

7. All dial scripting must be handled in the Client application. If you are using a DDE connection, the modem enabled Channel will act as a Topic. Thus the Channel name in your KEPServer project will be the Topic name of your DDE node in your Client. If you are using an OPC connection the Channel name will be the AccessPath of the OPC Group in your Client. Next define tags in your Client, to read and manipulate the appropriate Modem tags that exist in the KEPServer project.
8. With the KEPServer in On Line mode, run your Client and Initiate a call. You will need to load the correct number into the PhoneNumber tag, then write a value to the Dial tag. View the StringStatus tag for useful connection information.