

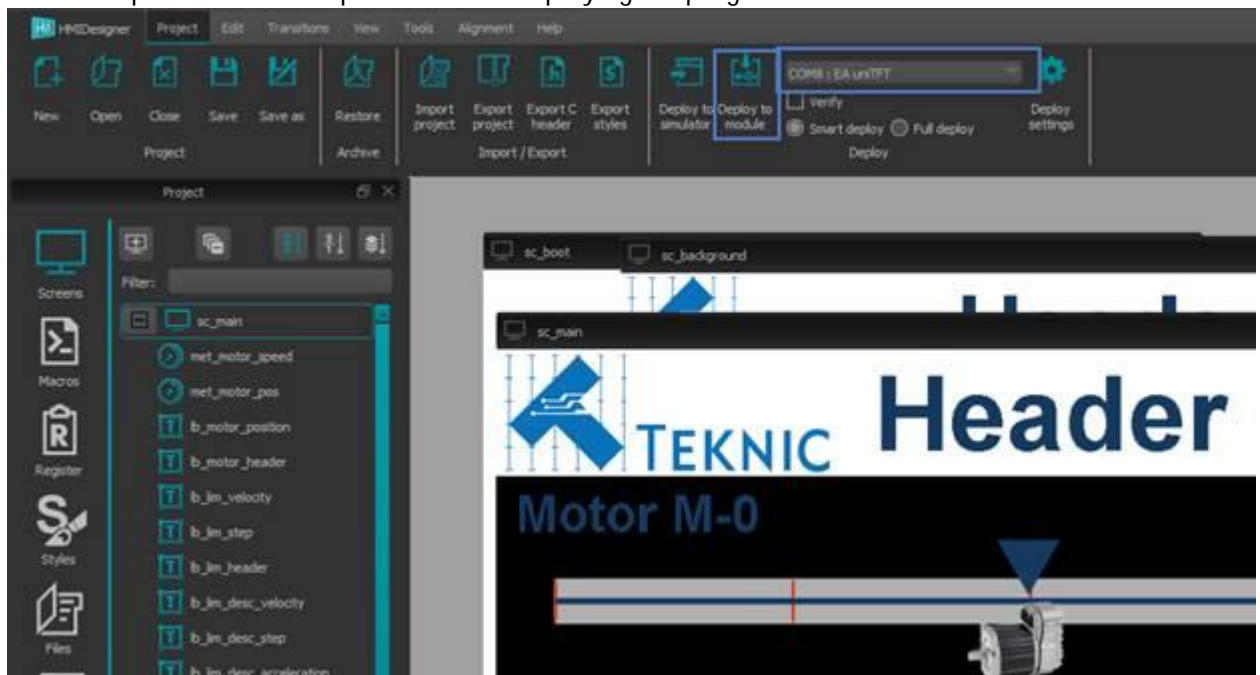
## Setup of the Display Vision HMI with Teknic ClearCore

To use the Display Visions HMI example, you will need the following resources:

1. The attached zip file, which contains:
  - a. A ClearCore example program for Arduino
  - b. A configuration program for the Display Visions HMI
  - c. Instructions for example setup provided by Display Visions
  - d. A third-party Modbus library for Arduino that allows ClearCore to be compatible with the HMI.
2. Teknic ClearCore library and Arduino IDE installer: [https://teknic-inc.github.io/ClearCore-library/arduino\\_ide\\_install.html](https://teknic-inc.github.io/ClearCore-library/arduino_ide_install.html)
3. Display Visions HMI designer software: <https://www.lcd-module.com/specials/download-kombi-unitftdesigner-plcdesigner-hmidesigner.html>

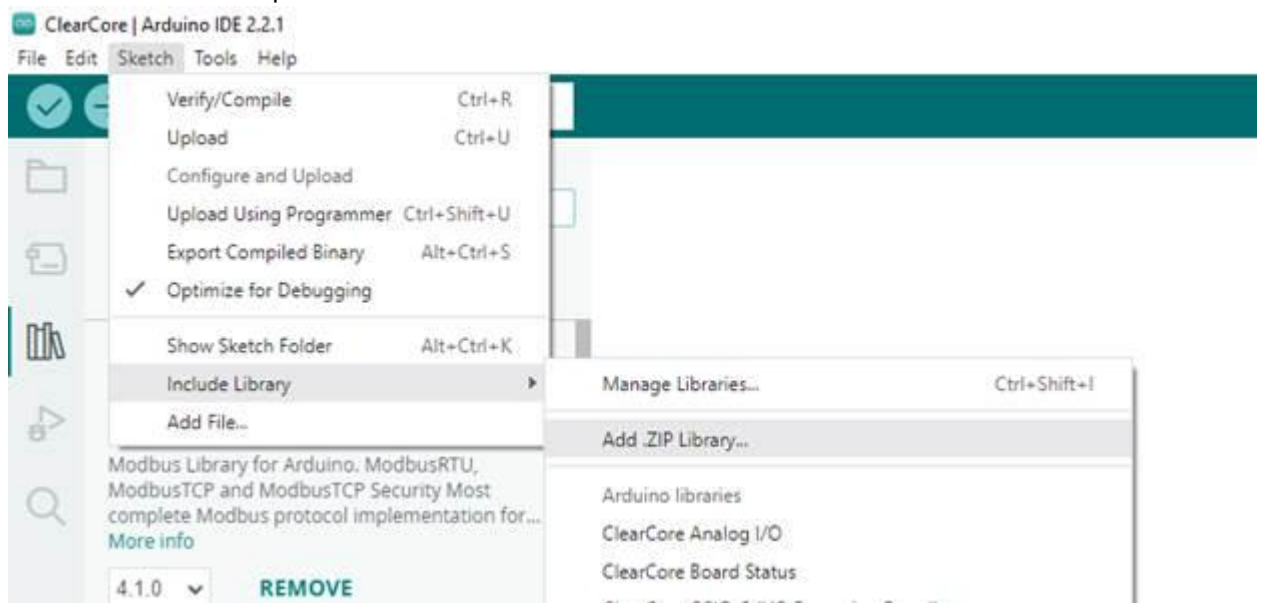
Instructions:

1. Install the Display Visions HMI designer software from the link above and open the HMI example for ClearCore from the .zip file attached to this email  
(DisplayVisionClearCoreExample.zip/TEKNIC\_ClearCore\_HMI070LM\_16ATCS\_ModbusTCP.zip/ClearCore\_HMI070LM/ClearCore\_HMI070LM.ehp)
2. Plug into the Display Visions HMI with a USB-C cable and deploy the ClearCore HMI project. The USB cable will provide power for the HMI during the deployment process. Ensure you select the HMI COM port from the dropdown before deploying the program. It will not auto-select.



3. Unplug the USB-C cable and connect your 24VDC supply to the HMI. The HMI user manual can be found here:  
[https://www.displayvisions.us/fileadmin/eng/pdf/grafik/hmi\\_html\\_hilfe/Connection.html](https://www.displayvisions.us/fileadmin/eng/pdf/grafik/hmi_html_hilfe/Connection.html)

4. Set the desired network settings (IP Address and Gateway Mask) under the LAN network section on the HMI.
5. Connect your 24VDC supply to ClearCore. The ClearCore user manual can be found here: [https://teknik.com/files/downloads/clearcore\\_user\\_manual.pdf](https://teknik.com/files/downloads/clearcore_user_manual.pdf)
6. Download and install the ClearCore Library and the Arduino IDE ([https://teknik-inc.github.io/ClearCore-library/\\_arduino\\_i\\_d\\_e\\_install.html](https://teknik-inc.github.io/ClearCore-library/_arduino_i_d_e_install.html))
7. Open the ClearCore example program from the attached .zip file in the Arduino IDE (DisplayVisionClearCoreExample.zip/TEKNIC\_ClearCore\_HMI070LM\_16ATCS\_ModbusTCP.zip/ClearCore\_ArduinoIDE/ClearCore/ClearCore.ino)
8. Add the third-party modbus library "modbus-esp8266-master.zip" in the Arduino IDE by navigating to Sketch->Include Library->Add .ZIP Library. Once you have selected this option, you will be prompted to select a .zip file. Navigate to the "modbus-esp8266-master.zip" attached to this email and select open.



9. Set the IP Address and MAC address for the HMI in the ClearCore.ino example program.

```
//-----Modbus-----
class ModbusEthernet : public ModbusAPI<ModbusTCPTemplate<EthernetServer, EthernetClient>> {};

IPAddress ipHMI(192, 168, 2, 100); // Address of Modbus Slave device

byte mac[] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xEE }; // MAC address for your controller
IPAddress ipClearCore(192, 168, 2, 110); // The IP address will be dependent on your local network
ModbusEthernet mb; // Declare ModbusTCP instance

uint16_t modbuserrorcount = 0; //after x modbus errors we do a system reset.

uint8_t modbusbuffer[100];
```

10. Plug into the ClearCore with a USB cable and load the ClearCore.ino example by selecting the arrow in the upper left corner of the Arduino IDE. If the ClearCore board was not automatically selected by the Arduino IDE when connected, ensure you select it from the dropdown menu.



11. Finally, connect the Ethernet port on ClearCore to the RJ-45 on the Display Visions HMI. The two devices should connect and allow you to move a CPM-SD motor if it is connected to M0 on the ClearCore controller.

#### Helpful Links:

- Teknic ClearCore Information: <https://teknic.com/products/io-motion-controller/>
- Teknic ClearCore Hardware Installation Manual: [https://teknic.com/files/downloads/clearcore\\_user\\_manual.pdf](https://teknic.com/files/downloads/clearcore_user_manual.pdf)
- Display Visions HMI: [https://www.displayvisions.us/fileadmin/eng/pdf/grafik/hmi\\_html\\_hilfe/HMIseries.html](https://www.displayvisions.us/fileadmin/eng/pdf/grafik/hmi_html_hilfe/HMIseries.html)  
We're showing the 7 inch Modbus RTU/TCP, WiFi, and RS485 (EA HMI070LN-16ATCS)