

ClearCore_HMI070LM

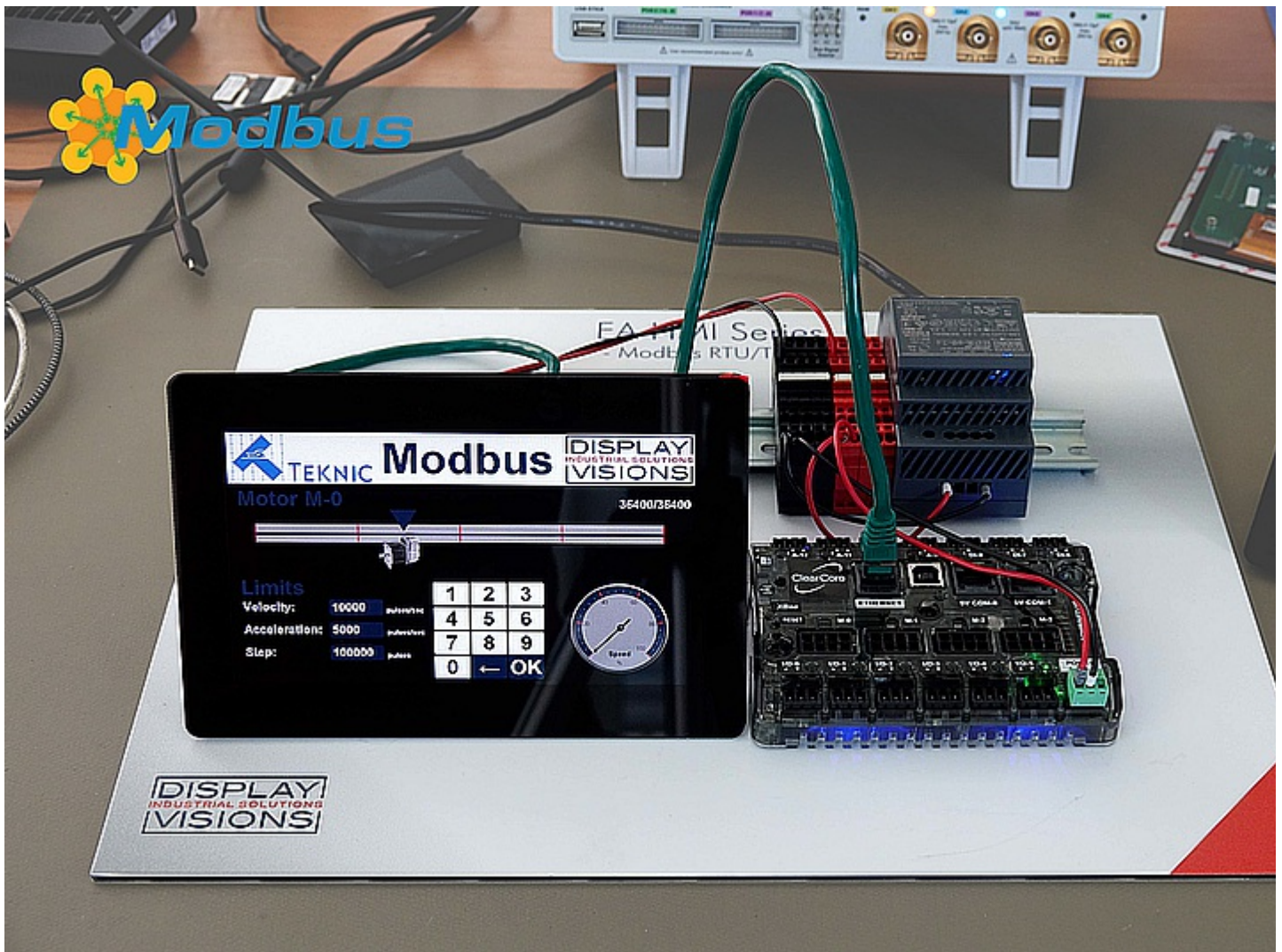
V1.0 - Modbus TCP to ClearCore

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1. General description
<p>This example project gives a rough overview of how to connect DISPLAY VISIONS EA HMI-Series to TEKNIC ClearCore Industrial I/O and motion controller.</p> <p>It shows how a Modbus TCP (Ethernet) connection is established between the HMI module and the PLC. Static IP-Addresses are used, so no extra hardware or software like DHCP server or router is needed. Just a simple ethernet cable.</p>

2. Hardware			
Item	Manufacturer	Part number	Shop
HMI	DISPLAY VISIONS	EA HMI070LM-16ATCS	Shop
PLC	TEKNIC	ClearCore CLCR-4-13	Shop
Ethernet	Generic	Ethernet cable	---
Supply	Generic	24 VDC	---

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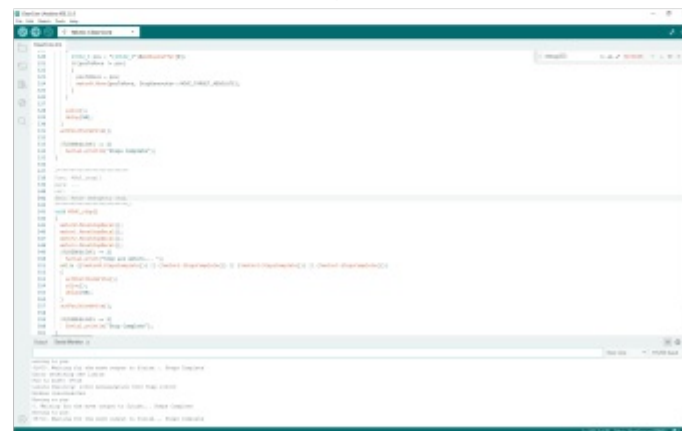
3. Software

The project is divided into two main sections: EA HMI070LM-16ATCS programming and ClearCore programming

Motor control



HMIDesigner



Arduino IDE

The project allows the user to set motor parameters, like limiting acceleration and velocity. User can also set the step limit. Through a slider the operator is able to give a motor position. The motor is automatically moved the new position, showing speed and actual position to the user as feedback. The modbus connection is done through ethernet using static ip. After modbus link is active the main screen is shown. If link breaks during operation an error is reported to the user.

Attention:

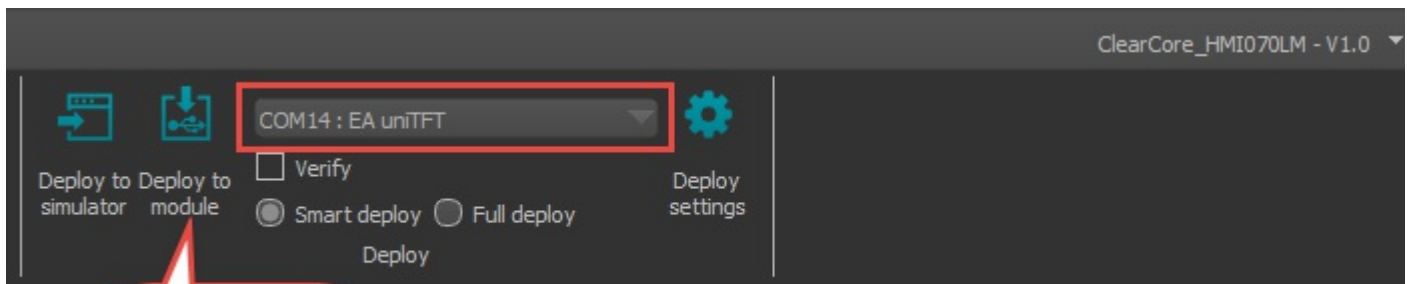
As this is only a small example there are no limiting switches for the motor. On power on the hardware assumes the motor to be in zero position. Please be aware if a real motor is connected

4. HMIDesigner

Install:

Download the app HMIDesigner from <https://www.lcd-module.com/specials/download-kombi-unitftdesigner-plcdesigner-hmidesigner.html>
After installation process, simply start ClearCore_HMI070LM.ehp.
The project opens and you can start flashing the software to your hardware.

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5. Arduino IDE

Install:

Detailed instruction in the TEKNIC start guide: https://teknik-inc.github.io/ClearCore-library/arduino_i_d_e_install.html
Existing Arduino IDE can be extended by installing the board manually. Add https://www.teknik.com/files/downloads/package_clearcore_index.json to "Additional Boards Manager URLs" in the IDE preferences.

Attention:

The integrated Modbus library does not compile. For TEKNIC ClearCore we need the third party library "modbus-esp8266-master". Please download from <https://github.com/emelianov/modbus-esp8266>. Thanks to a.m.emelianov@gmail.com
For details on library installation, please see official Arduino IDE [docs](#).