AutomationDirect Application Note

Connecting an EZ-Touch panel to a Entivity (Think & Do) Studio/Live WinPLC

INTRODUCTION

This application explains the process of connecting an EZ-Touch panel to Entivity (Think & Do) Studio/Live WinPLCs.

APPLIES TO ENTIVITY (THINK & DO) VERSIONS

Think & Do Studio/Live Version 5.4 or higher is needed.

TOOLS NEEDED

1. Think & Do Studio/Live Version 5.4 or higher.
2. WinPLC loaded with the correct CE Runtime firmware. *(Live 5.4 requires that the WinPLC has the 5.4.1 CE Runtime installed the same goes for other versions)* Consult Entivity's website www.entivity.com for latest WinPLC CE Runtime and programming software versions
3. EZ-Touch panel *(**All** EZ Touch panel models are supported).*
4. EZ-Touch Edit software *(V2.4 or higher is required to work with all TnD Live and Studio versions).*
5. EZ-Touch cables *(EZ-2CBL and EZTOUCH-PGMCBL).*

QUICK NOTES

1. ***Please refer to the WinPLC Modbus Addressing Chart on page 7 of this document, it contains very important information about how your TnD Project will be addressed in conjunction with your EZ Touch panel.***
2. It is strongly suggested that you complete your TnD project prior to importing your TnD MAP file. *(The MAP file contains all the Data Items you created in your TnD project).*
3. The WinPLC must be in RUN mode in order for the panel to communicate with it. If the WinPLC is not in RUN you will get a "*PLC Communication Timeout*" error on the EZ Touch display.

QUICK NOTES Cont.

4. EZ Touch panels support the following Data Items:

Think & Do Live	Think & Do Studio
Flag	Flag
Number	Number
Input	Input
Output	Output
Counter	Counter
Float*	Float*
String**	String**

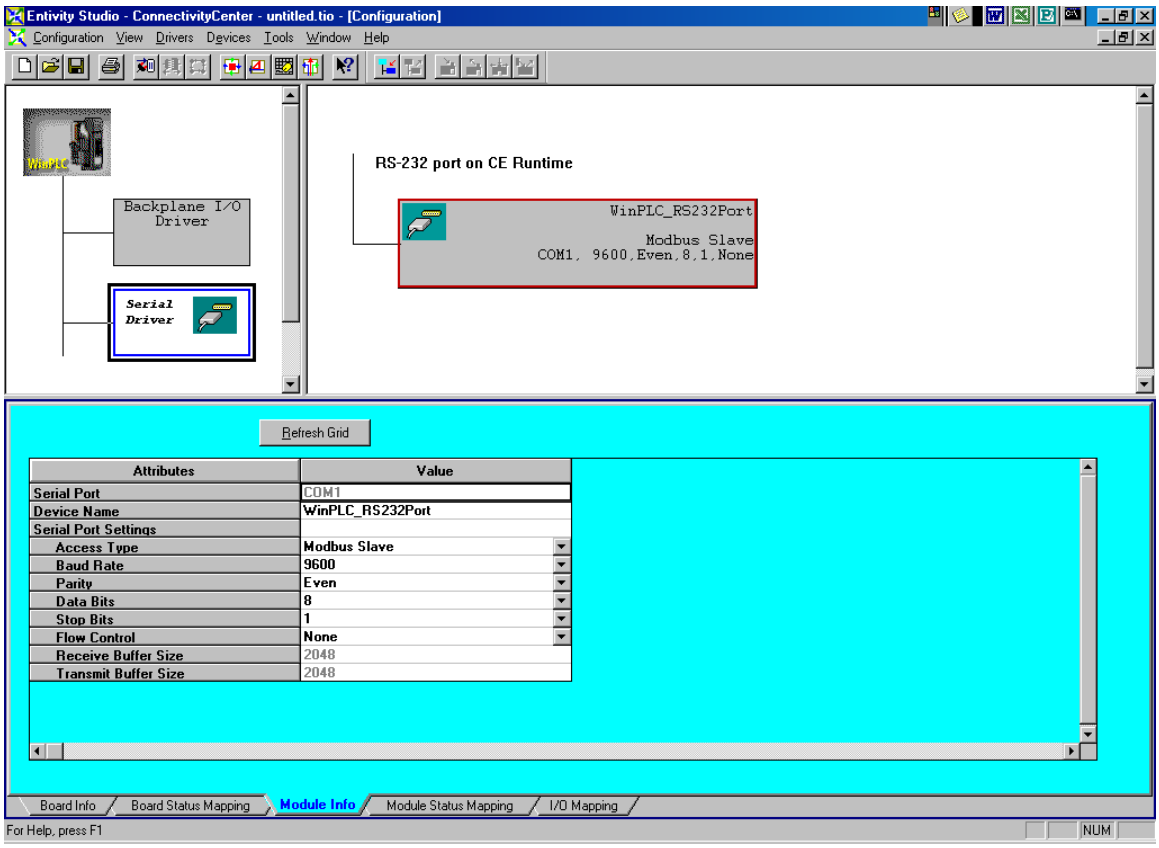
   - *Think & Do supports double precision (64bit) Floating-point numbers. However, the EZ Touch software only supports single precision (32bit) Floating-point numbers. This means that the EZ Touch panel cannot display numbers greater than seven digits. Larger numbers will be rounded to an exponent format.
   - **You will need TnD Live WinPLC CE imageV5.4.1 or Studio CE Image V6.3.0 or higher in order to support STRING Data types. Check the Entivity website www.entivity.com for these CE image updates. STRING data types in conjunction with the EZ Touch software can be a maximum of 40 characters.
5. All Data Items **MUST** be imported from your TnD Project. Via the MAP file. It is **NOT** possible to create new Tags in the EZ Touch Edit software and import them back into your WinPLC project.
6. If you add new Data Items to your TnD project you must *Build* the project again. Then re-import the TnD MAP file in order to use the new Data Items in your EZ Touch project.
7. The WinPLC supports up to three of the H2-SERIO modules they will also be configured the same as the on-board WinPLC Serial port.

THINK & DO PROJECT

The TnD project will be setup the same as any normal WinPLC project. You will create data items and flow charts as you normally would. In Connectivity Center *(Studio)6.XX*/ I/O View *(5.4,5.5)* the WinPLC COM port must be setup as a ***MODBUS Slave***. This will allow the WinPLC project to talk to the EZ-Touch panel. You will need to configure the Serial port settings of **BOTH** devices to match. The default settings for the EZ Touch panel driver are as follows:

BAUD= 9600 **PARITY= Even**
DATA BITS=8 **STOP BITS= 1**
FLOW CONTROL= None

The settings for the WinPLC are illustrated below.



EZ-Touch PROJECT

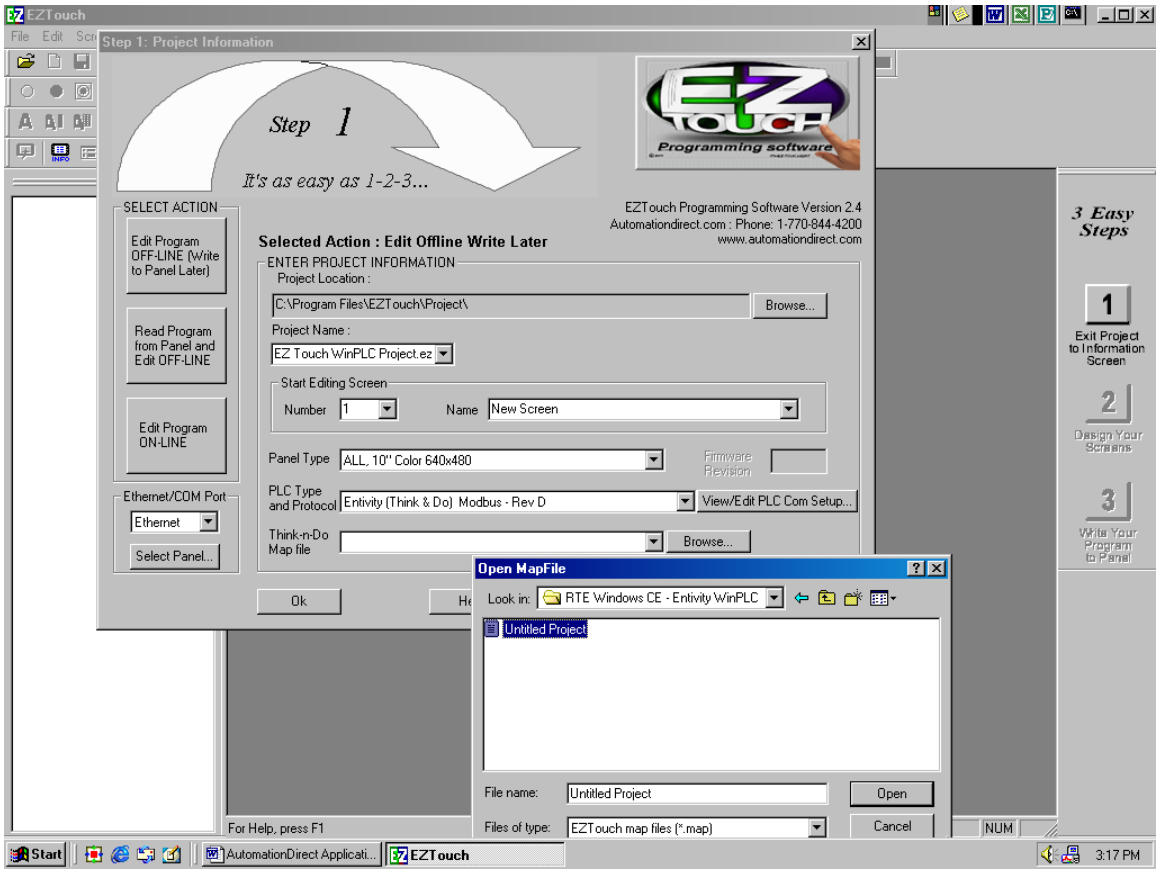
Step1 – Project Information Screen

The first screen you encounter is the Project Information screen.

1. Choose "Edit Program OFF-LINE" (write to Panel Later).
2. Choose a *Project Name*.
3. Choose the correct *Panel Type* (**All** EZ Touch panels are supported).
4. Choose *PLC Type and Protocol* (Entivity (Think & Do) Modbus Rev. XX)
5. Upon choosing the driver (Entivity (Think & Do) Modbus Rev. XX) The Think & Do Map File selection area will become active.
6. You will need to open the folder that contains the TnD MAP file for your Think & Do project. This file is typically located in the (*RTE Windows CE-Entivity WinPLC)* folder of your TnD project.

Note:
Each EZ-Touch project has seven different files associated with it. One of these files has a (.MAP) file extension. Do *NOT* select this file when trying to import the MAP file from your TnD project.

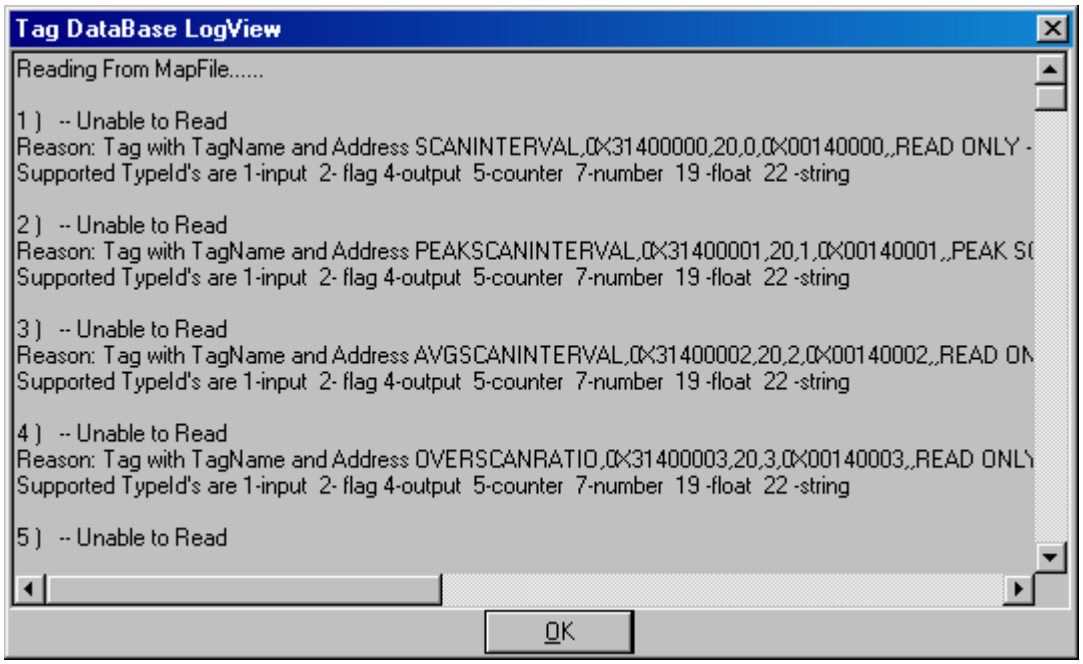
The window will look like the following.



Step2 - Configure your panel

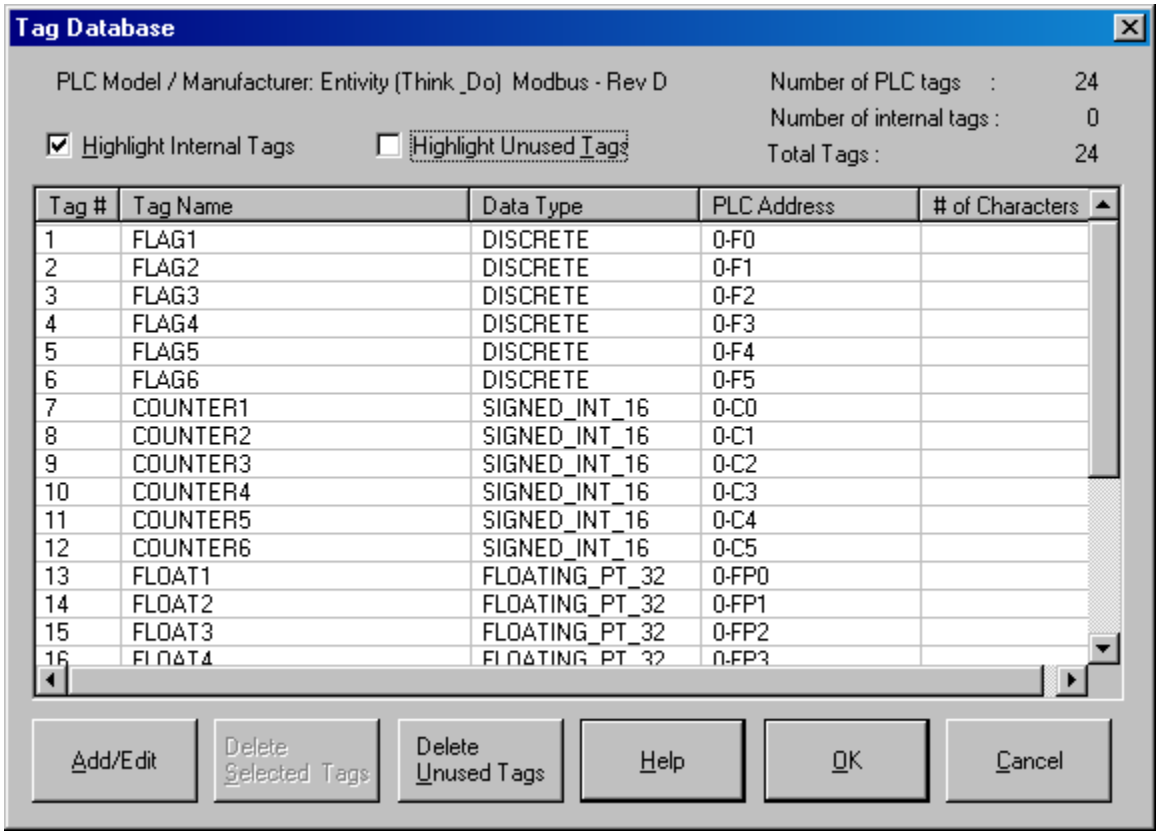
1. Once you have filled out the *Project Information* screen and selected OK. The software will import and build a Tag Data base for your EZ Touch project.
2. You will then see the following screen.
3. The *Tag Database Log View* is simply a Log of Data Items that did not import in from your TnD MAP file.
4. The following Data Items are **NOT** supported in EZ Touch Edit.

   System **Byte**
   Array **Axis**
   Comm **Timer**



Step2 - Configure your panel Cont.

Here is what your imported TnD MAP file will look like in the Tag Database of the EZ Touch Edit software. EZ TouchV2.0 and higher.



Step3 – Design your EZ Touch Screens

You are now ready to create custom screens to suit your various needs. Most Pushbuttons will be addressed to Flag Data Items. Numeric Entries/Displays, Meter objects, Trend Graphs,… etc will be addressed to Number and Counter Data Items. Keep in mind that the Data Type for the Number and Counter addresses will almost always be Unsigned INT 16 or 32. WinPLCs do not support the BCD number format.

Step4 – Write your project to the panel

Once you have designed your screens you can download the project to the panel. Connect the EZTOUCH-PGMCBL to the COM1 port on the panel and a free RS-232 9pin D-shell Comport on the PC.

WinPLC MODBUS Address Chart

1. The address ranges depicted in this chart are not modifiable. It is very important that you take into consideration the information in this chart prior to creating your TnD project.

2. When creating the data items that will be used in conjunction with your EZ Touch panel it is imperative that the Data Item Addresses fall within this chart. For example: If you create a large project with a lot of Number Data Items and those Numbers exceed beyond address N-1023 they will ***NOT*** be mapped into your EZ Text project. There are ***NO*** MODBUS Address equivalents beyond N-1023 as far as TnD is concerned when used with the EZ Text panel.

Note:

The Counter data type is available in all versions of Live and Studio V6.3 and higher. Counters must be enabled in Studio to be available. Refer to your Studio Help file and documentation for more information.

MODBUS OBJECT	MODBUS ADDRESS	THINK & DO DATA TYPE	THINK & DO LOGICAL ID
COILS	00001-04096	OUTPUTS	O-0 to O-4095
COILS	04097-08192	FLAGS	F-0 to F-4095
INPUT STATUS	10001-14096	INPUTS	I-0 to I-4095
HOLDING REGISTERS	40001-42048	COUNTERS	C-0 to C-2047
HOLDING REGISTERS	42049-44096	FLOATS	FP-0 to FP-1023
HOLDING REGISTERS	44097-46144	NUMBERS	N-0 to N-1023

Floats and Numbers use double word addressing with Modbus addresses. Therefore, to address N-O you will use Modbus addresses 44097 & 44098. To address FP-0 you will use Modbus address 42049 & 42050.