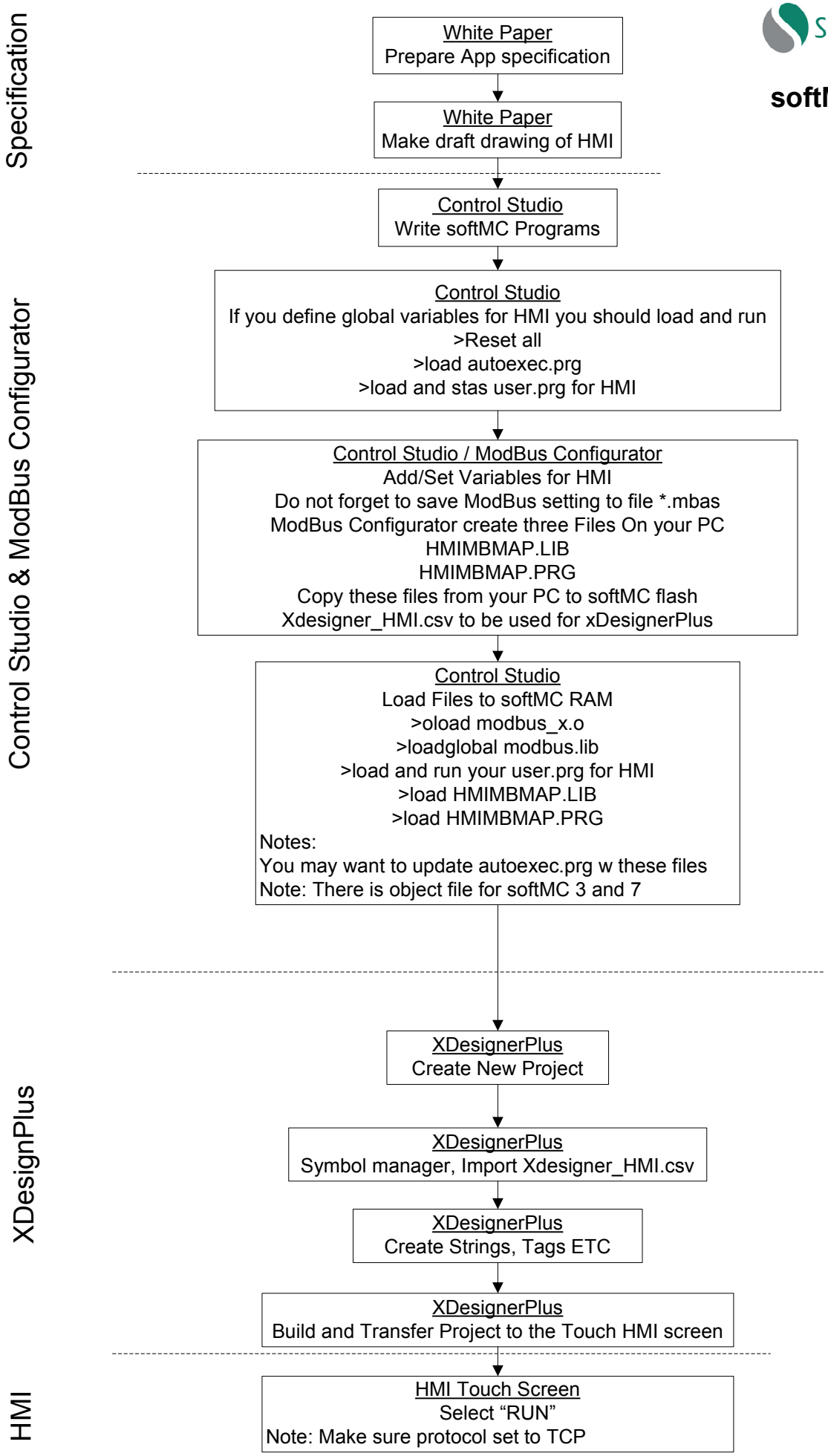
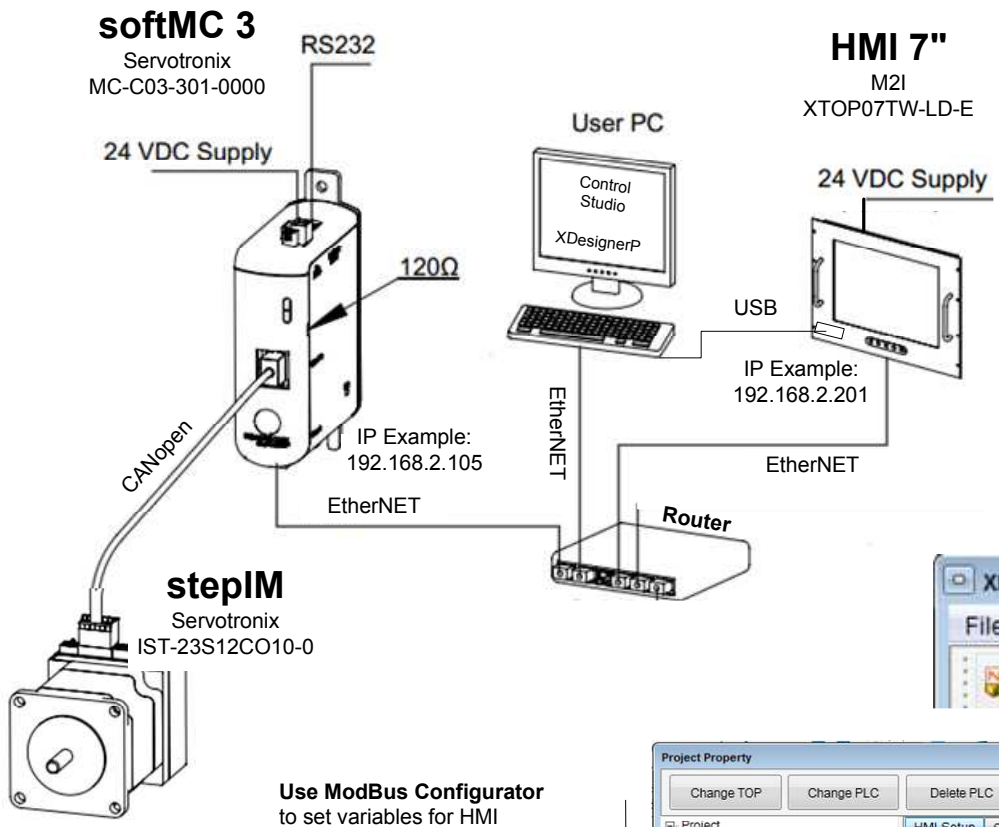
softMC with HMI



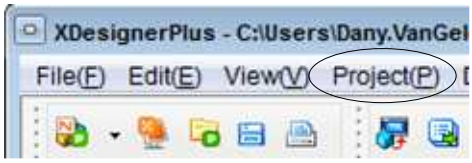
Example: How to operate softMC 3 with HMI



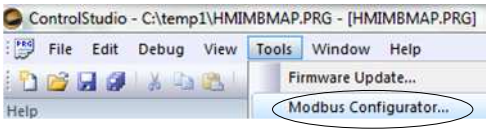
Important Notes:
Protocol: TCP Modbus
Short – DEC 16 bit; 1 register (16 bit)
Long – DEC 32 bit; 2 registers (integer)
Float – 2 registers (real)
~~Louble – 4 registers~~
PLC:= softMC 3
Device:= HMI

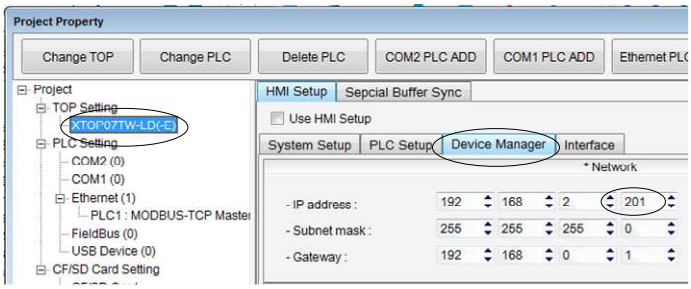
Port's are 502
softMC 3 (0) = HMI (40001)
Use Float instead of double

Use XDesignerPlus
to set and program HMI



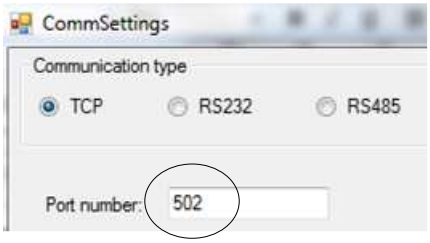
Use ModBus Configurator
to set variables for HMI

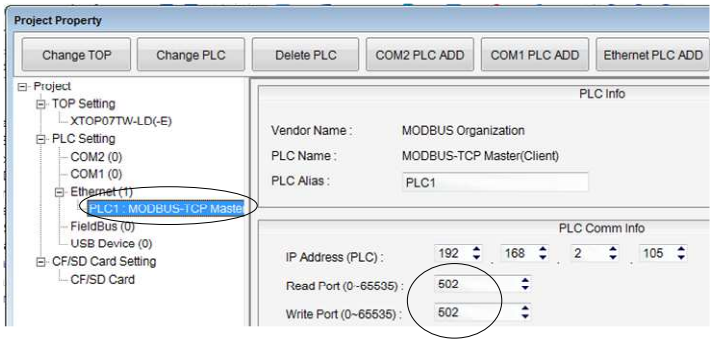




Port's 502

setup



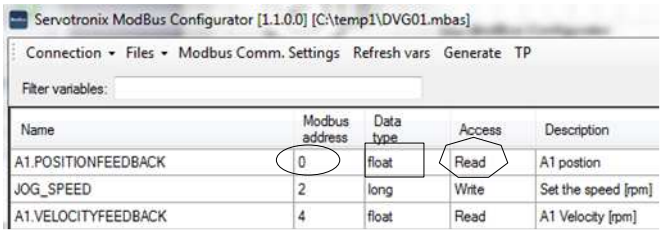


Address 0 = 40001 or Symbol preferred

Float Float
Short = Dec 16 bit
Long DEC 32 bit

Read →
Write (read) ←

Create Variables for HMI

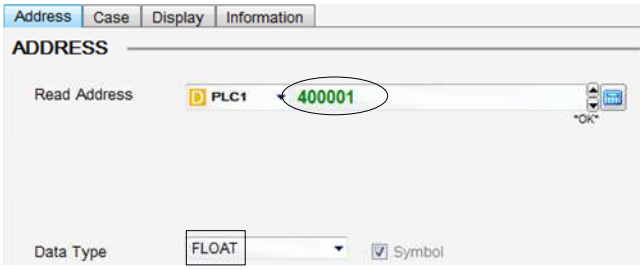


Name	Modbus address	Data type	Access	Description
A1.POSITIONFEEDBACK	0	float	Read	A1 postion
JOG_SPEED	2	long	Write	Set the speed [rpm]
A1.VELOCITYFEEDBACK	4	float	Read	A1 Velocity [rpm]

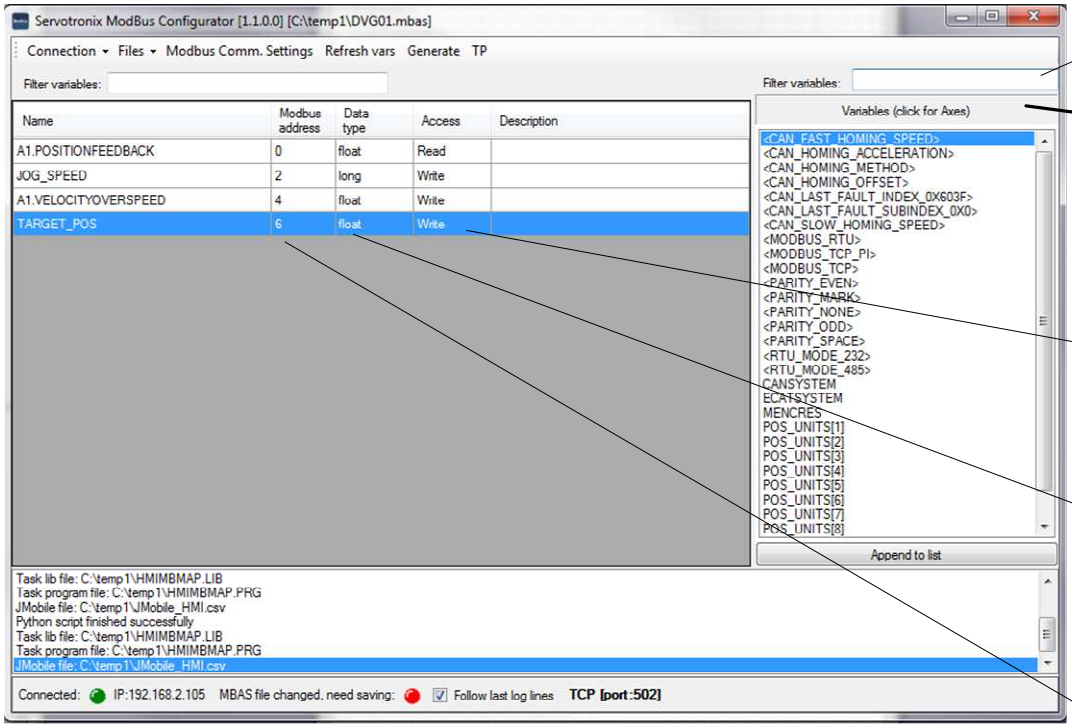
Execute Generate created
HMIMBMAP.LIB HMIMBMAP.PRG
Xdesigner_HMI.csv for XdesignerPlus

Load to softMC RAM
modbus.o modbus.lib
HMIMBMAP.LIB HMIMBMAP.PRG

Build Tags

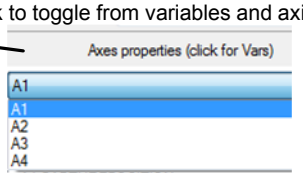


Execute Build and Transfer to the HMI
Make sure HMI protocol is set to TCP
click "RUN"



Use to down drill your selection

Click to toggle from variables and axis



Read – When going from softMC to HMI only

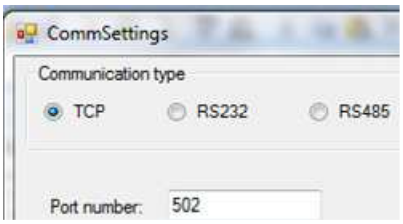
Write – When HMI change value in softMC

Use either float or long

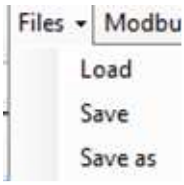
softMC	HMI
float	Float
Long	Dec

Adresses

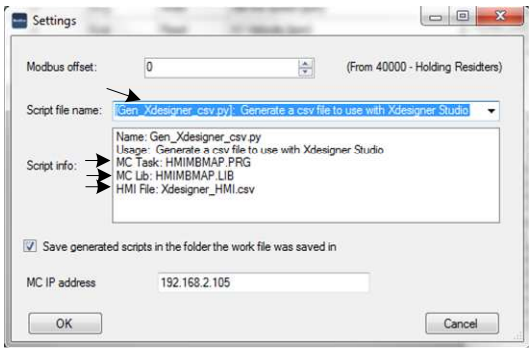
softMC	HMI
0	40001
2	40003
4	40006
..	....



Set the communication to TCP and Port to 502

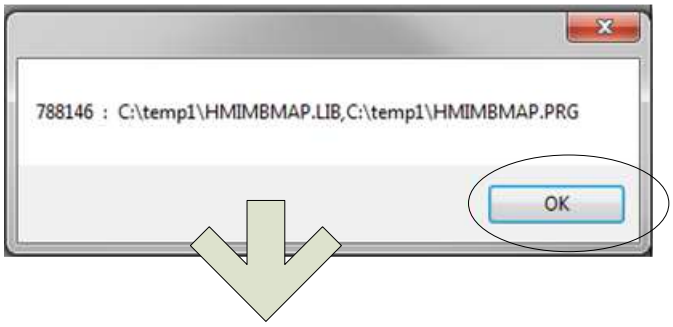


safe your ModBus configuration to a file *.mbas (prefer use same folder as your App)



Select xDesignerPlus script

Generate following Files

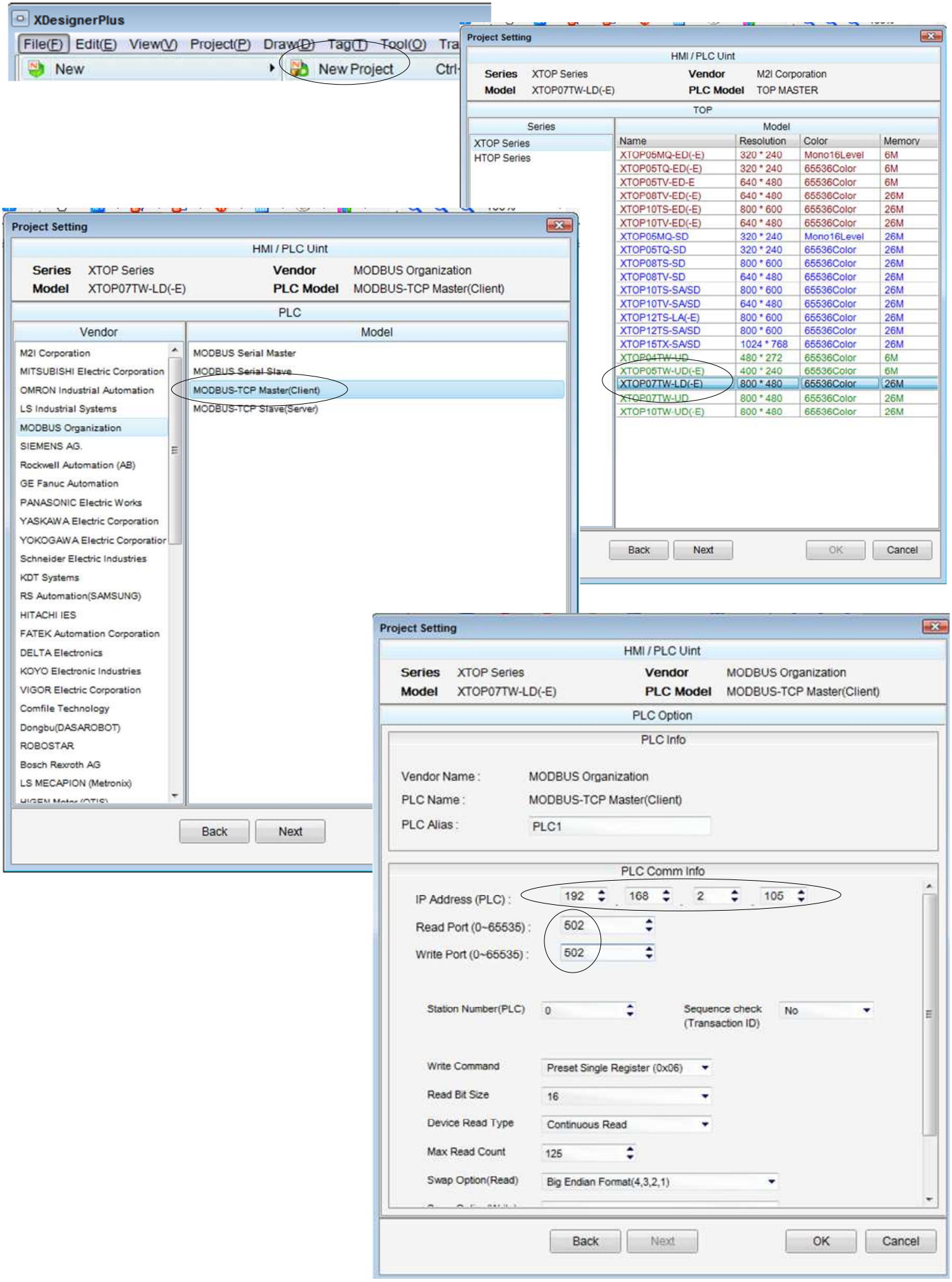


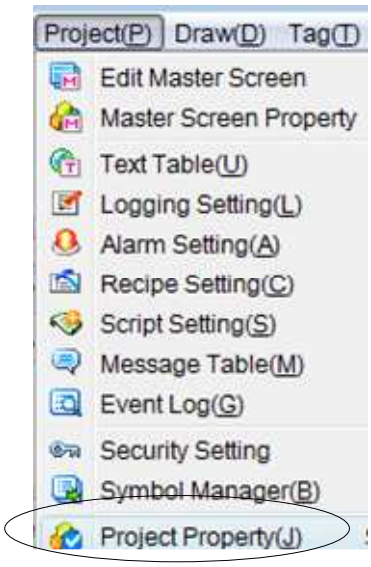
HMIMBMAP.LIB
HMIMBMAP.PRG

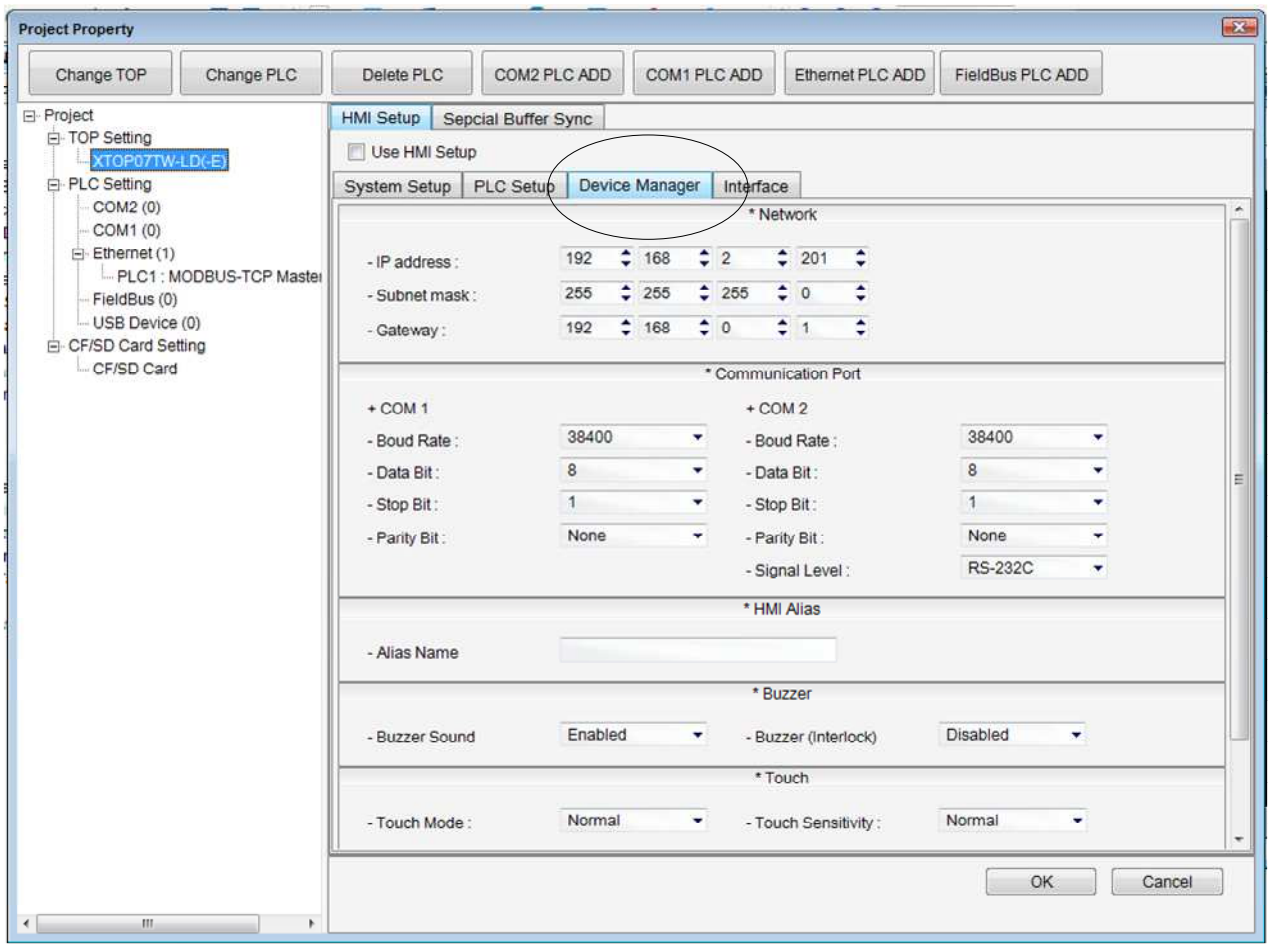
Important: this files where created on your PC using ControlStudio you have to copy them to the softMC Flash

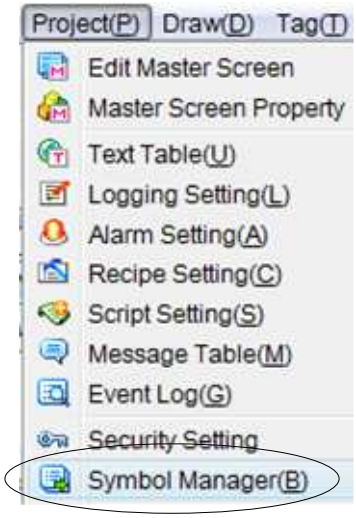
Xdesigner_HMI.csv

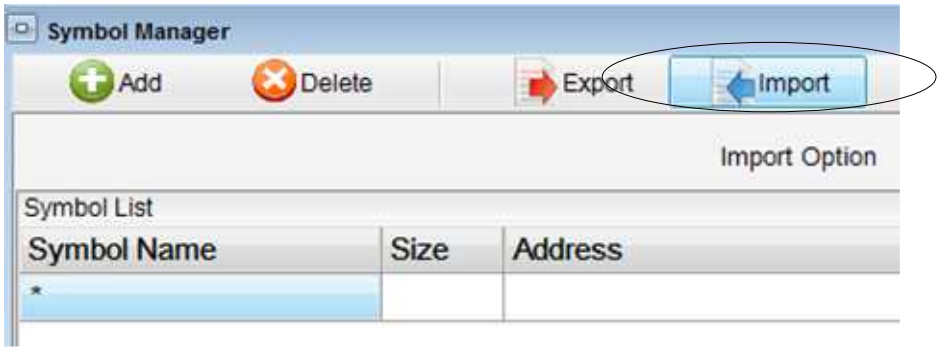
Important: this file where created on your PC you should import it to xDesignerPlus

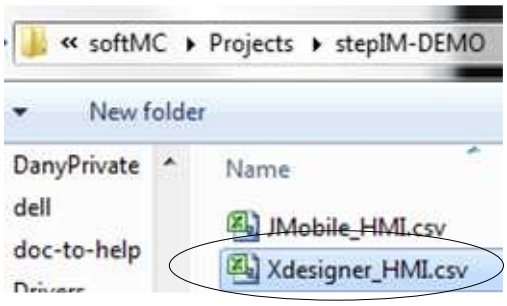

XDesignerPlus
File(F) Edit(E) View(V) Project(P) Draw(D) Tag(T) Tool(O)
New
New Project
Project Setting
HMI / PLC Uint
Series XTOP Series
Vendor M2I Corporation
Model XTOP07TW-LD(-E)
PLC Model TOP MASTER
TOP
Series
XTOP Series
HTOP Series
Model
Name Resolution Color Memory
XTOP05MQ-ED(-E) 320 * 240 Mono16Level 6M
XTOP05TQ-ED(-E) 320 * 240 65536Color 6M
XTOP05TV-ED-E 640 * 480 65536Color 6M
XTOP08TV-ED(-E) 640 * 480 65536Color 26M
XTOP10TS-ED(-E) 800 * 600 65536Color 26M
XTOP10TV-ED(-E) 640 * 480 65536Color 26M
XTOP05MQ-SD 320 * 240 Mono16Level 26M
XTOP05TQ-SD 320 * 240 65536Color 26M
XTOP08TS-SD 800 * 600 65536Color 26M
XTOP08TV-SD 640 * 480 65536Color 26M
XTOP10TS-SA/SD 800 * 600 65536Color 26M
XTOP10TV-SA/SD 640 * 480 65536Color 26M
XTOP12TS-LA(-E) 800 * 600 65536Color 26M
XTOP12TS-SA/SD 800 * 600 65536Color 26M
XTOP15TX-SA/SD 1024 * 768 65536Color 26M
XTOP04TW-UD 480 * 272 65536Color 6M
XTOP05TW-UD(-E) 400 * 240 65536Color 6M
XTOP07TW-LD(-E) 800 * 480 65536Color 26M
XTOP07TW-UD 800 * 480 65536Color 26M
XTOP10TW-UD(-E) 800 * 480 65536Color 26M
Back Next OK Cancel
Project Setting
HMI / PLC Uint
Series XTOP Series
Vendor MODBUS Organization
Model XTOP07TW-LD(-E)
PLC Model MODBUS-TCP Master(Client)
PLC
Vendor
M2I Corporation
MITSUBISHI Electric Corporation
OMRON Industrial Automation
LS Industrial Systems
MODBUS Organization
SIEMENS AG.
Rockwell Automation (AB)
GE Fanuc Automation
PANASONIC Electric Works
YASKAWA Electric Corporation
YOKOGAWA Electric Corporatior
Schneider Electric Industries
KDT Systems
RS Automation(SAMSUNG)
HITACHI IES
FATEK Automation Corporation
DELTA Electronics
KOYO Electronic Industries
VIGOR Electric Corporation
Comfile Technology
Dongbu(DASAROBOT)
ROBOSTAR
Bosch Rexroth AG
LS MECAPION (Metronix)
Model
MODBUS Serial Master
MODBUS Serial Slave
MODBUS-TCP Master(Client)
MODBUS-TCP Slave(Server)
Back Next
Project Setting
HMI / PLC Uint
Series XTOP Series
Vendor MODBUS Organization
Model XTOP07TW-LD(-E)
PLC Model MODBUS-TCP Master(Client)
PLC Option
PLC Info
Vendor Name : MODBUS Organization
PLC Name : MODBUS-TCP Master(Client)
PLC Alias : PLC1
PLC Comm Info
IP Address (PLC) : 192 168 2 105
Read Port (0~65535) : 502
Write Port (0~65535) : 502
Station Number(PLC) 0
Sequence check (Transaction ID) No
Write Command Preset Single Register (0x06)
Read Bit Size 16
Device Read Type Continuous Read
Max Read Count 125
Swap Option(Read) Big Endian Format(4,3,2,1)
Back Next OK Cancel

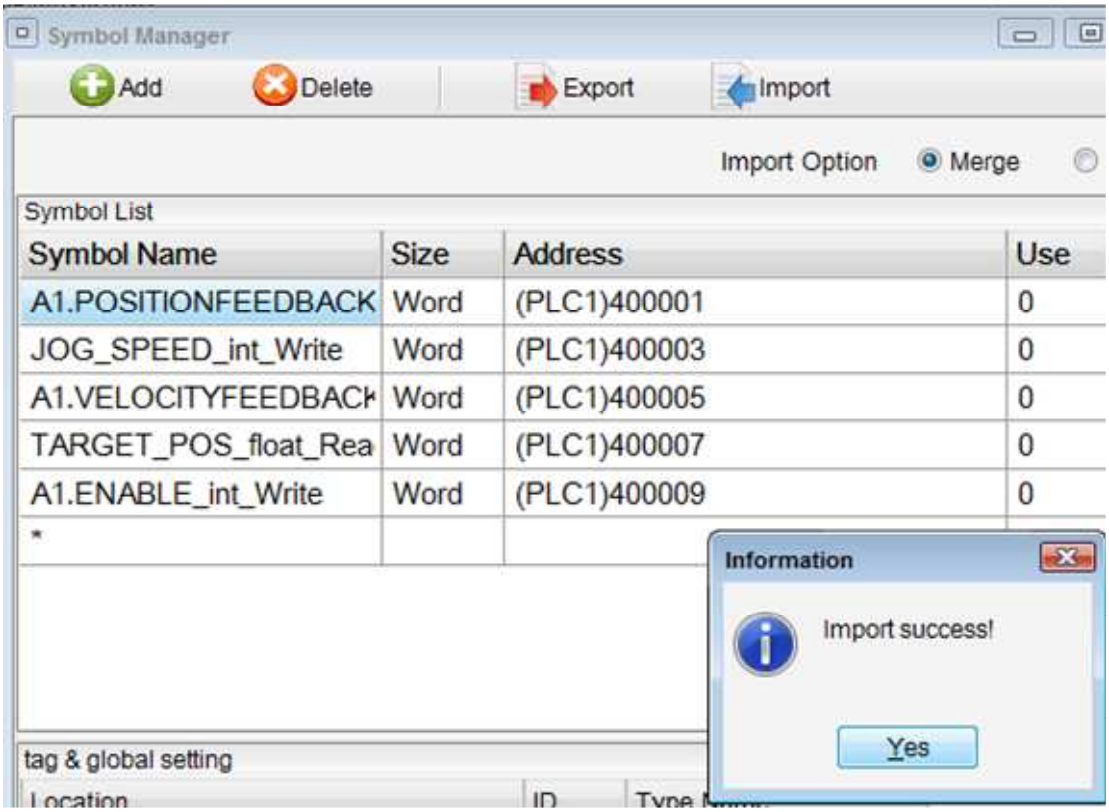

Project(P)
Draw(D)
Tag(T)
Edit Master Screen
Master Screen Property
Text Table(U)
Logging Setting(L)
Alarm Setting(A)
Recipe Setting(C)
Script Setting(S)
Message Table(M)
Event Log(G)
Security Setting
Symbol Manager(B)
Project Property(J)

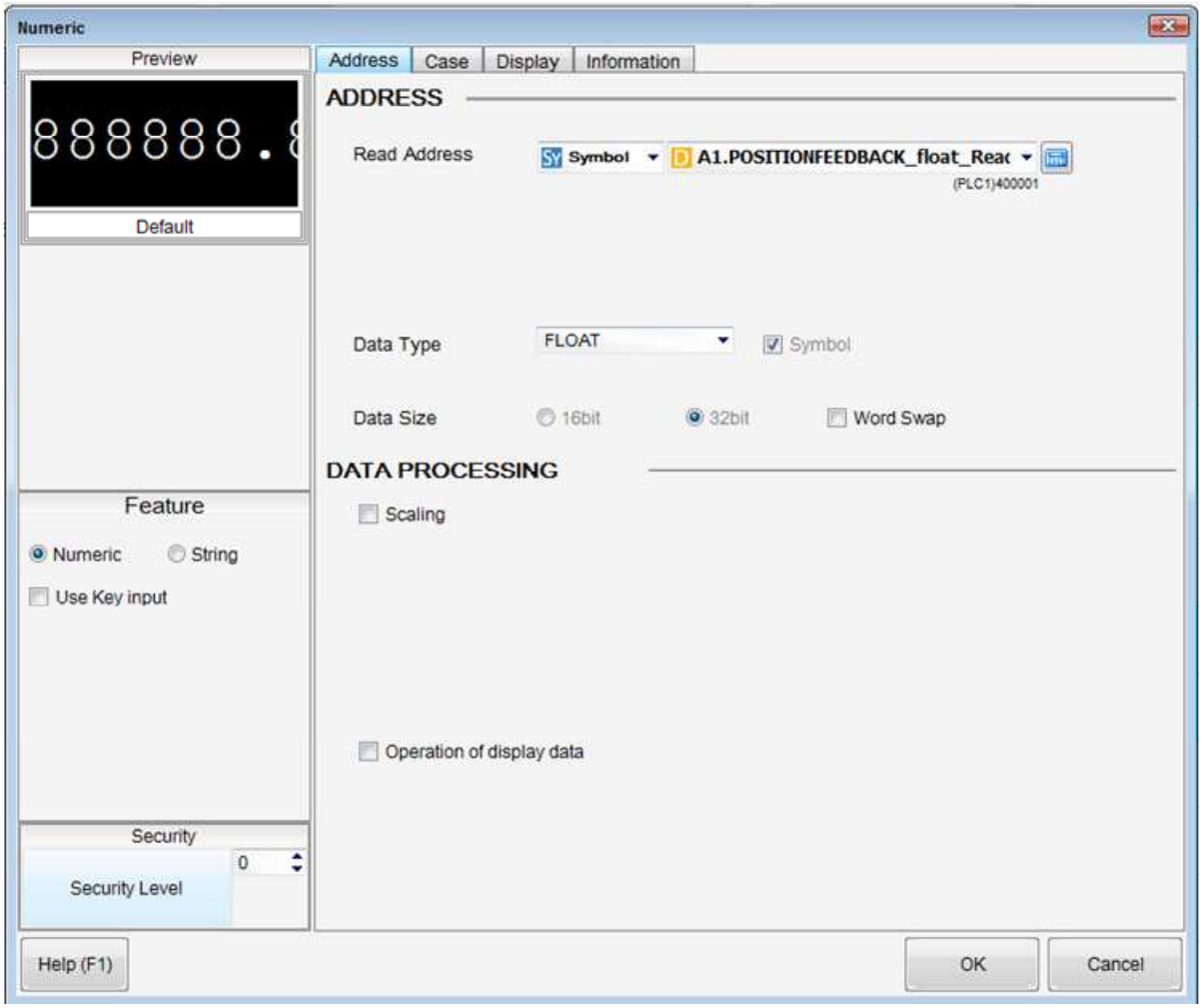

Project Property
Change TOP
Change PLC
Delete PLC
COM2 PLC ADD
COM1 PLC ADD
Ethernet PLC ADD
FieldBus PLC ADD
Project
TOP Setting
XTOP07TW-LD(-E)
PLC Setting
COM2 (0)
COM1 (0)
Ethernet (1)
PLC1 : MODBUS-TCP Master
FieldBus (0)
USB Device (0)
CF/SD Card Setting
CF/SD Card
HMI Setup
Sepcial Buffer Sync
Use HMI Setup
System Setup
PLC Setup
Device Manager
Interface
* Network
- IP address : 192 168 2 201
- Subnet mask : 255 255 255 0
- Gateway : 192 168 0 1
* Communication Port
+ COM 1
- Boud Rate : 38400
- Data Bit : 8
- Stop Bit : 1
- Parity Bit : None
+ COM 2
- Boud Rate : 38400
- Data Bit : 8
- Stop Bit : 1
- Parity Bit : None
- Signal Level : RS-232C
* HMI Alias
- Alias Name
* Buzzer
- Buzzer Sound Enabled
- Buzzer (Interlock) Disabled
* Touch
- Touch Mode : Normal
- Touch Sensitivity : Normal
OK
Cancel

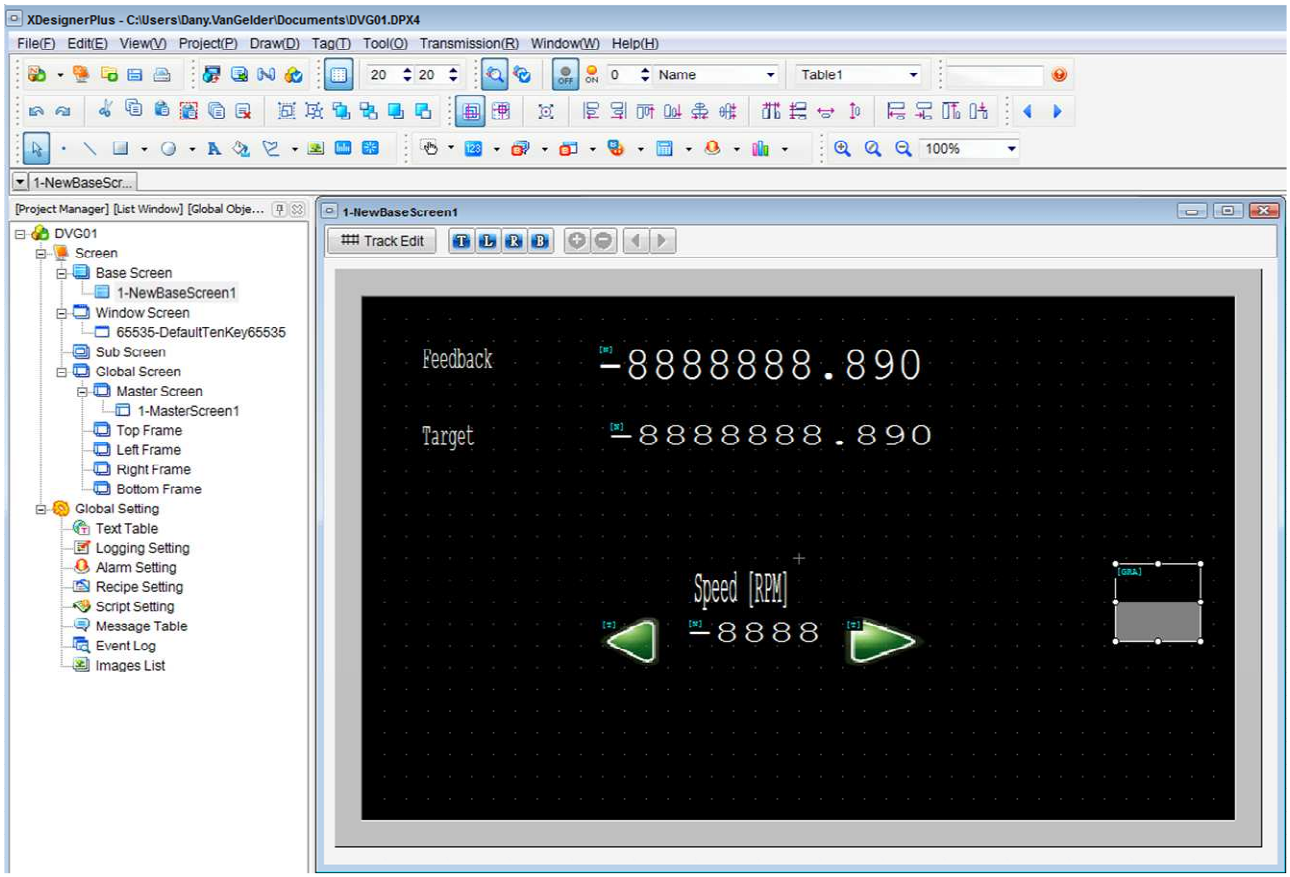

Project(P)
Draw(D)
Tag(T)
Edit Master Screen
Master Screen Property
Text Table(U)
Logging Setting(L)
Alarm Setting(A)
Recipe Setting(C)
Script Setting(S)
Message Table(M)
Event Log(G)
Security Setting
Symbol Manager(B)

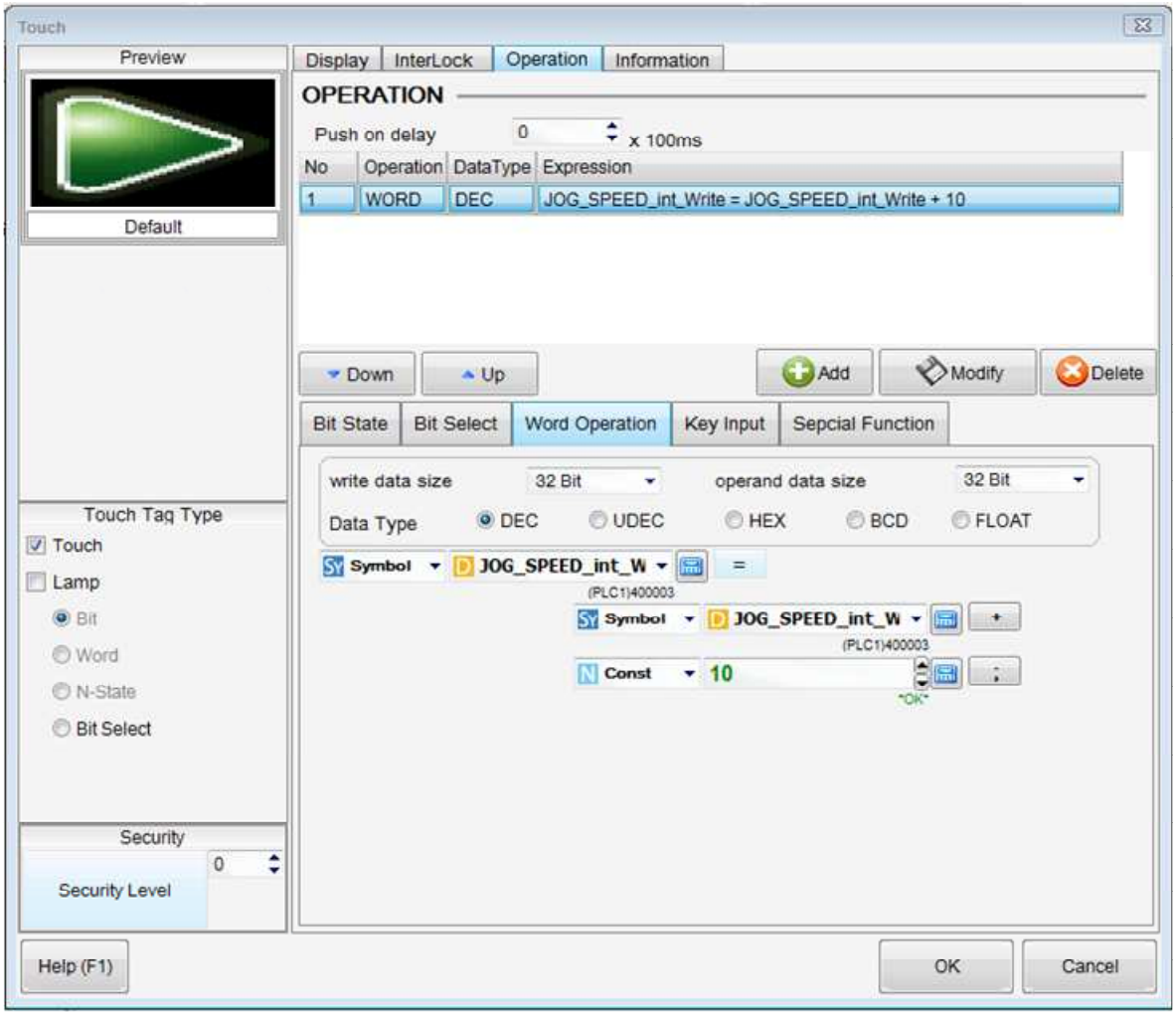

Symbol Manager
Add
Delete
Export
Import
Import Option
Symbol List
Symbol Name
Size
Address
*

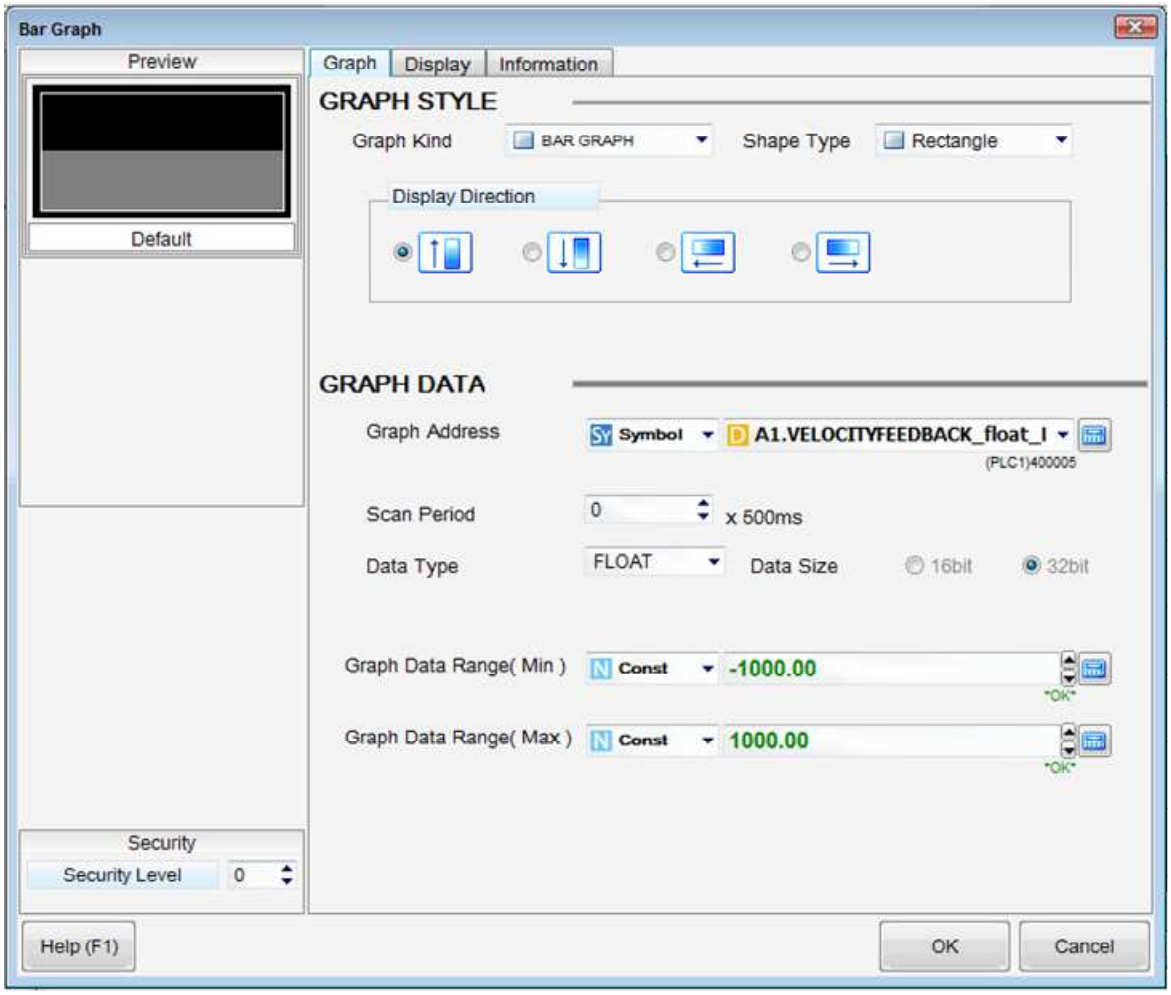

« softMC ▸ Projects ▸ stepIM-DEMO
New folder
DanyPrivate
dell
doc-to-help
Name
IMobile_HMI.csv
Xdesigner_HMI.csv


Symbol Manager
Add
Delete
Export
Import
Import Option
Merge
Symbol List
Symbol Name
Size
Address
Use
A1.POSITIONFEEDBACK
Word
(PLC1)400001
0
JOG_SPEED_int_Write
Word
(PLC1)400003
0
A1.VELOCITYFEEDBACK
Word
(PLC1)400005
0
TARGET_POS_float_Rea
Word
(PLC1)400007
0
A1.ENABLE_int_Write
Word
(PLC1)400009
0
*
Information
Import success!
Yes
tag & global setting
Location
ID


Numeric
Preview
888888.8
Default
Address
Case
Display
Information
ADDRESS
Read Address
Symbol
A1.POSITIONFEEDBACK_float_Reac
(PLC1)400001
Data Type
FLOAT
Symbol
Data Size
16bit
32bit
Word Swap
DATA PROCESSING
Scaling
Feature
Numeric
String
Use Key input
Operation of display data
Security
Security Level
0
Help (F1)
OK
Cancel


XDesignerPlus - C:\Users\Dany.VanGelder\Documents\DVG01.DPX4
File(F) Edit(E) View(V) Project(P) Draw(D) Tag(T) Tool(O) Transmission(R) Window(W) Help(H)
Name
Table1
100%
1-NewBaseScr...
[Project Manager] [List Window] [Global Obje...
DVG01
Screen
Base Screen
1-NewBaseScreen1
Window Screen
65535-DefaultTenKey65535
Sub Screen
Global Screen
Master Screen
1-MasterScreen1
Top Frame
Left Frame
Right Frame
Bottom Frame
Global Setting
Text Table
Logging Setting
Alarm Setting
Recipe Setting
Script Setting
Message Table
Event Log
Images List
1-NewBaseScreen1
Track Edit
Feedback
-8888888.890
Target
-8888888.890
Speed [RPM]
-8888


Touch
Preview
Default
Display
InterLock
Operation
Information
OPERATION
Push on delay
0
x 100ms
No
Operation
DataType
Expression
1
WORD
DEC
JOG_SPEED_int_Write = JOG_SPEED_int_Write + 10
Down
Up
Add
Modify
Delete
Bit State
Bit Select
Word Operation
Key Input
Sepcial Function
write data size
32 Bit
operand data size
32 Bit
Data Type
DEC
UDEC
HEX
BCD
FLOAT
Symbol
JOG_SPEED_int_W
(PLC1)400003
=
Symbol
JOG_SPEED_int_W
(PLC1)400003
+
Const
10
"OK"
Touch Tag Type
Touch
Lamp
Bit
Word
N-State
Bit Select
Security
0
Security Level
Help (F1)
OK
Cancel


Bar Graph
Preview
Default
Graph
Display
Information
GRAPH STYLE
Graph Kind
BAR GRAPH
Shape Type
Rectangle
Display Direction
GRAPH DATA
Graph Address
Symbol
A1.VELOCITYFEEDBACK_float_I
(PLC1)400005
Scan Period
0
x 500ms
Data Type
FLOAT
Data Size
16bit
32bit
Graph Data Range(Min)
Const
-1000.00
"OK"
Graph Data Range(Max)
Const
1000.00
"OK"
Security
Security Level
0
Help (F1)
OK
Cancel

Summary: write all relevant files to create HMI working w softMC

File Name	Created by	Function	For	Comments