

**Note:** xPC Target requires host machine to have Windows (32 or 64 bit)

## **1.0 XPC Target Setup**

### **1.1 Target Machine Requirements**

- a. USB 3.0 ports are disabled in BIOS
- b. Ethernet card connecting to host must be supported by xPC Target
  - i. Check online for list of supported cards
  - ii. Match VendorID and DeviceID to list
- c. Ethernet card used for EtherCAT must be supported by xPC Target
  - i. See “help” documentation for list of supported cards
  - ii. Match VendorID and DeviceID to list

### **1.2 Host Machine Requirements**

- a. Compiler installed (Windows SDK will work)
- b. MATLAB installed
- c. “rtwintgt -setup” in MATLAB shell
- d. “xpcsetCC(‘setup’)” in MATLAB shell

### **1.3 Network Setup**

- a. Use a cross-over Ethernet cable from host to target
- b. In MATLAB shell on host machine type “xpceplr” and press “Enter”
  - i. Network config should be (close to):

GETXPCENV:

Name	: TargetPC1
TargetRAMSizeMB	: Auto
MaxModelSize	: 1MB
SecondaryIDE	: off
NonPentiumSupport	: off
MulticoreSupport	: on
LegacyMultiCoreConfig	: off
USBSupport	: on
ShowHardware	: off
EthernetIndex	: 0
HostTargetComm	: TcpIp
RS232HostPort	: COM1
RS232Baudrate	: 115200
TcpIpTargetAddress	: 10.10.10.11
TcpIpTargetPort	: 22222

```

TcpIpSubNetMask           : 255.255.255.0
TcpIpGateway              :
TcpIpTargetDriver         : Auto
TcpIpTargetBusType        : PCI
TcpIpTargetISAMemPort     : 0x300
TcpIpTargetISAIRQ         : 5

```

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TargetScope               : Enabled

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#### xPC Target Embedded Option

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EmbeddedOption            : Enabled
TargetBoot                : NetworkBoot
TargetMACAddress          : 90:b1:1c:90:93:f6
BootFloppyLocation        :
CDBootImageLocation       :
DOSLoaderLocation         :

```

#### Additional ENV values

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EthernetIndex             : 0

```

- c. Assign static IP on host machine
  - i. "Windows Key" + "R"
  - ii. Type "ncpa.cpl"
  - iii. Hit "OK"
  - iv. Right click on host-to-target NIC
  - v. Click "properties"
  - vi. Uncheck "Internet Protocol Version 6 (TCP/IPv6)"
  - vii. Highlight "Internet Protocol Version 4 (TCP/IPv4)"
  - viii. Click "properties"
  - ix. Select "User the following IP address"
  - x. Type in static IP and subnet mask
  - xi. Press "OK"
- d. If target machine ethernet card used for communication with host is not first in Bus/Slot order (onboard will usually be first) ...
  - i. In MATLAB shell on host machine type "setxpcenv('EthernetIndex','1')"
  - ii. Press "Enter"
- e. Press "Create boot disk" button in "xPC Target Explorer" under "Properties" > "Boot configuration"
- f. Network boot on target machine on the correct ethernet card.

## **2.0** **TwinCAT Setup**

### **2.1** **Install Ethernet Adapter**

- a. Options > "Show Real Time Ethernet Compatible Devices"
- b. "Compatible devices" > Click on (highlight) desired device
- c. Press "Install"
- d. Ethernet adapter should appear under "Installed and ready to use devices"

### **2.2** **Scan For EtherCAT devices**

- a. Expand "I/O - Configuration"
- b. Right click on "I/O Devices"
- c. Click "Scan Devices..."
- d. Press "OK"
- e. Any new devices should show up.