

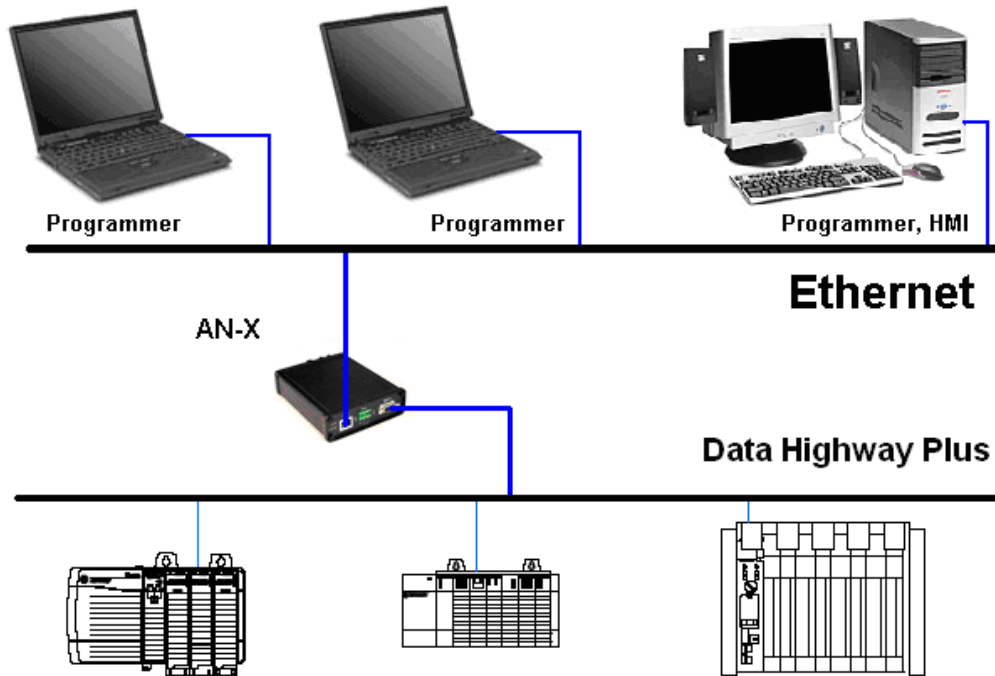
Application Note

Guide to Firmware for the AN-X2-AB-DHRIO



The same AN-X2-AB-DHRIO hardware can be used for multiple applications depending on the firmware loaded. It can use only one firmware type at a time.

AN-X2-AB-DHP Firmware



Use it for:

- programming software such as RSLogix 5
- DDE or OPC server, for example RSLinx, on Ethernet to access Data Highway Plus
- upgrading from legacy Data Highway Plus PanelViews to EtherNet PanelViews
- messaging

AN-X is a station on Data Highway Plus. It:

- supports station numbers 0-77 octal
- supports baud rates 57.6, 115.2, 230.4

On Ethernet, AN-X emulates a 4-slot ControlLogix rack with a 1756-ENET in slot 0 and a 1756-DHRIO in slot 1 (channel A only).

AN-X2-AB-DHP firmware supports IP aliasing, which makes it possible for Ethernet PanelViews or other clients that don't support CIP routing to access PLCs on Data Highway Plus. The AN-X can be configured to respond as more than one IP address, each of which is mapped to a different Data Highway Plus station address.

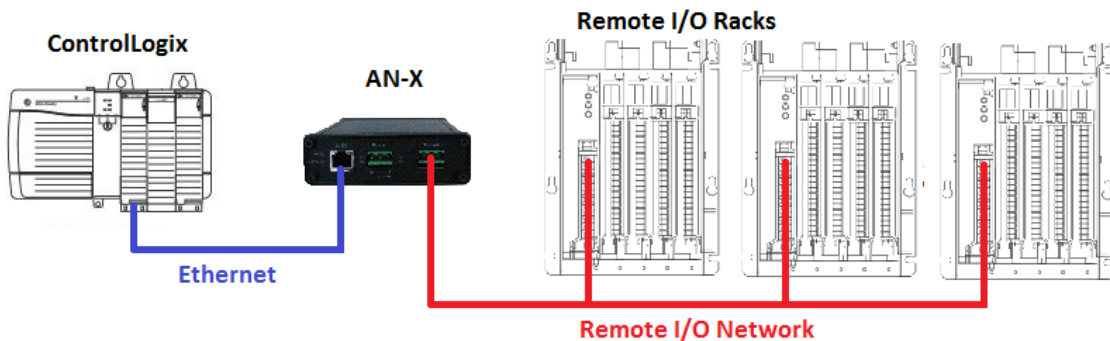
AN-X2-AB-DHP firmware supports routing, which allows devices such as PLC-5s or SLCs on Data Highway Plus to initiate messages that can be routed across Ethernet.

The AN-X can route messages from DH+ to Ethernet Devices such as CLX or newer PLC5/E or SLC5/05 that support Ethernet/IP. This can include multiple hops in the CIP routing path.

AN-X can also send messages from DH+ to Classic PLCs such as older PLC5/E's or SLC5/05's that do not support Ethernet/IP (using the older CSP protocol)

AN-X can bridge messages from one DH+ to another DH+ over Ethernet using two AN-X modules or a combination of AN-X and 1756-DHRIO modules

AN-X2-AB-SCAN Firmware



Use it when you want to scan remote I/O. It is especially useful where you want to upgrade an application running on a PLC-5 to a ControlLogix or CompactLogix, keeping the existing remote I/O racks and field wiring.

AN-X is a master on remote I/O. It:

- supports up to 32 remote I/O adapters, any combination of partial racks
- supports remote I/O rack numbers 0 to 76 octal
- supports baud rates 57.6, 115.2, 230.4 Kbaud
- supports block transfer reads and writes at all possible remote I/O locations
- updates block transfers automatically according to a requested update time
- supports autoconfiguration of remote I/O racks and baud rate

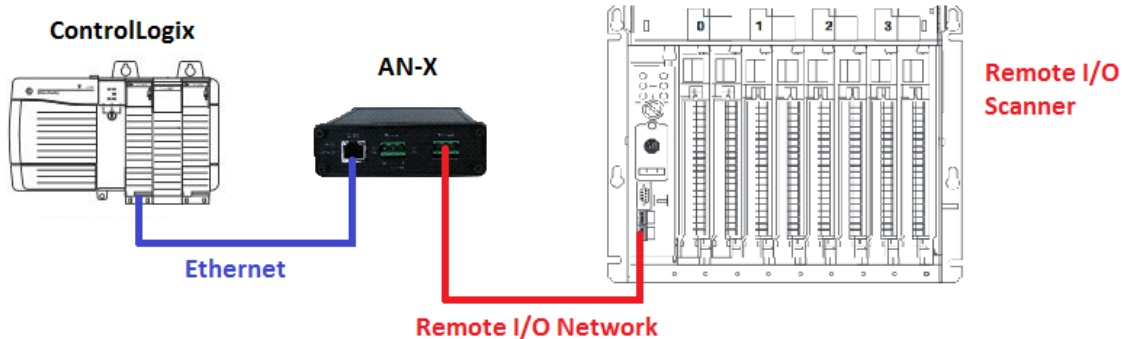
Data is mapped between Ethernet/IP and RIO using the Windows tool AnxAbRioScanCfg. It:

- configures and maps discrete I/O data
- configures and maps block transfer data

- provides monitoring functions: diagnostic counters, rack status, RIO data

AN-X is a scheduled connection target on Ethernet/IP. The ControlLogix or equivalent sends remote I/O discrete output and block transfer write data to the AN-X, and receives remote I/O discrete inputs and block transfer read data from the AN-X. It supports up to 16 connections.

AN-X2-AB-ADPT Firmware



Use it when you want to exchange data between a ControlLogix on Ethernet with a PLC-5 or SLC on remote I/O. Use it:

- to monitor discrete and block transfer data on a remote I/O network
- in "ghost mode": monitor the remote I/O inputs and outputs of an existing application, develop a replacement application on a ControlLogix using live inputs from the existing application and compare its outputs to the outputs from the existing application, then switch over when you know that the new application duplicates the behaviour of the existing application

AN-X is an adapter on remote I/O. It:

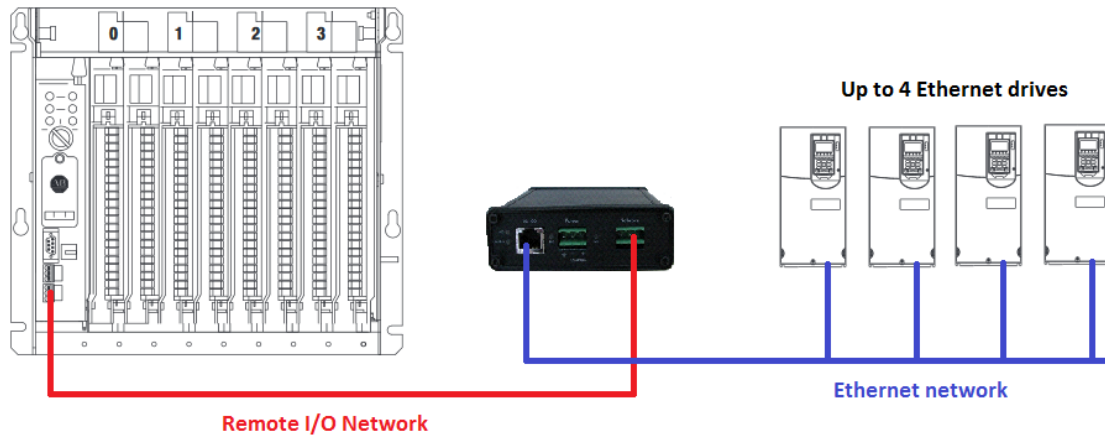
- emulates up to 32 remote I/O racks, any combination of partial racks
- supports remote I/O rack numbers 0 to 76 octal
- supports active racks (emulated by the AN-X) or monitored real racks on the same remote I/O network, or a combination of the two
- supports 57.6, 115.2, 230.4 baud rates
- supports block transfer reads and writes at all possible RIO locations

Data is mapped between Ethernet/IP and remote I/O using the Windows tool AnxAbRioCfgAdpt, which also provides monitoring functions for diagnostic counters, rack status, remote I/O data

AN-X is a scheduled connection target on Ethernet/IP. The ControlLogix or equivalent sends remote I/O discrete input and block transfer read data to the AN-X, and receives remote I/O discrete outputs and block transfer write data from the AN-X

It supports up to 16 Ethernet/IP connections.

AN-X2-AB-DRV-04 Firmware



Use it for upgrading legacy Allen-Bradley remote I/O drives to Ethernet/IP drives. It supports up to 4 Ethernet drives.

AN-X emulates adapters (remote I/O racks) on remote I/O. It:

- emulates up to 4 remote I/O racks (can be partial racks)
- supports 57.6, 115.2, 230.4 baud rates
- supports remote I/O rack numbers 0 to 76 octal

AN-X is a scheduled connection originator on Ethernet/IP; the Ethernet drives are targets.

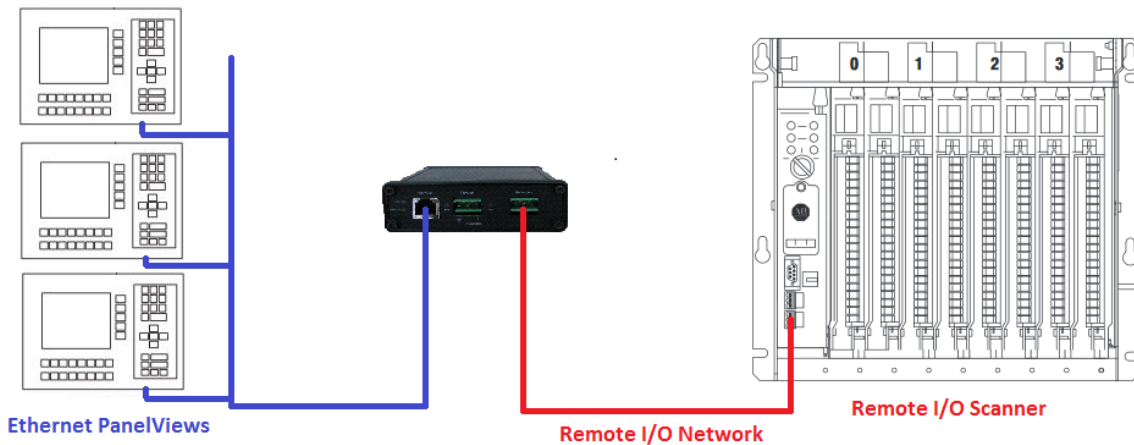
Configuration is done with a text file. It:

- defines remote I/O baud rate and racks
- maps the remote I/O address of each drive to the IP address of an Ethernet drive
- maps data between remote I/O drive and Ethernet drive
 - maps bit or word locations
 - maps INTs to DINTs or DINTs to INTs, INTs to FLOATs or FLOATs to INTs
 - scales integer or floating point data

Data on the Ethernet drive is defined in a template file. Templates are provided for many Ethernet drives. You can create your own template files if your requirements are different or if there is no template for the drive you want to use.

Remote I/O block transfers can generate unscheduled messages on Ethernet to exchange data with the Ethernet drive.

AN-X2-AB-HMI Firmware



Use it to replace legacy PanelViews on Remote I/O with Ethernet equivalents such as Panelview Plus, PanelView Plus 6 or 7.

For applications where multiple HMI terminals existed on a Remote I/O network, a single AN-X2 gateway can be used to provide data to multiple HMI terminals on Ethernet.

For compatibility with some existing PanelView applications, AN-X2-AB-HMI supports a block transfer by length mode, where multiple block transfers of different lengths are defined at the same I/O location (rack, I/O group and slot).

AN-X is an adapter on remote I/O. It:

- emulates up to 16 partial racks, rack numbers from 0 to 76 octal
- supports remote I/O baud rates 57.6, 115.2, 230.4
- supports block transfer reads and writes

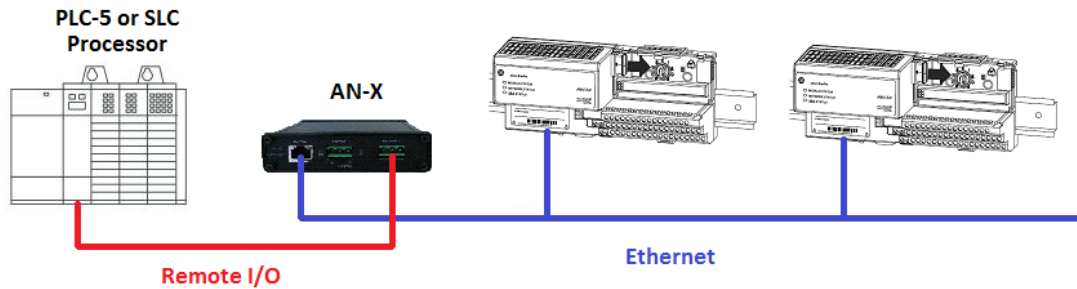
AN-X is configured with a text file. It contains the remote I/O baud rate, rack definitions, block transfer definitions and file mappings.

Ethernet/IP devices access data on the AN-X as PLC-5 input (I), output (O), status (S).

Block transfer data can map to integer (N), binary (B) and float (F) files

AN-X emulates a PLC-5 on Ethernet, discrete data typically maps to I and O files, block transfer data typically maps to integer files.

AN-X2-AB-RIO-EIPSCN Firmware



Use it to update applications where you are replacing obsolete Flex 1794-ASB remote I/O adapters. Use it to:

- retain PLC and logic
- replace 1794-ASB modules with 1794-AENT or 1794-AENTR Ethernet adapters

AN-X is an adapter on remote I/O. It:

- emulates remote I/O racks, supports any combination of partial racks
- supports remote I/O rack numbers 0 to 76 octal
- supports 57.6, 115.2, 230.4 baud rates
- supports block transfer reads and writes at all possible RIO locations

AN-X is a scheduled connection originator on Ethernet/IP. The Ethernet adapters are the targets.

The AN-X2-AB-RIO-EIPSCN firmware:

- supports up to 16 Ethernet connections
- each Ethernet adapter and the associated discrete I/O requires one connection
- each analog module requires one connection
- some discrete modules, for example 32-bit discrete modules, require a separate connection
- supports autoconfiguration based on the attached Ethernet adapter modules. You then edit the configuration AN-X generates to match your remote I/O rack configuration

All I/O module configuration data comes from the AN-X, not from remote I/O. Configuration options correspond to what's available in a ControlLogix, not what is available under remote I/O.

No configuration data gets passed from remote I/O to Ethernet. If your program dynamically changes configuration data, or if it contains logic to configure a module, the program will have to be modified to remove or disable that logic.

Data is mapped from remote I/O to Ethernet/IP in a text file

Supported I/O modules are defined in Ethernet device files. In some cases, there are several device files for a module, if there are different ways of using the module.



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