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EtherPath vs. EtherPoll

Selecting the best product for your application

The EtherPath and EtherPoll, while using similar hardware, have completely different firmware and operation. This should explain the differences between these two products and provide the information to help select the best one for your application. Both units have standard features such as web browser/direct/telnet configuration, optional power supplies, RS-232/422/485 interface, and SNMP. Only the differences between the two products are discussed here.

Basic Functionality:

The EtherPath when operated as a single unit:

The EtherPath uses TCP/IP packets with the Telnet or raw TCP protocol. It is commonly used as a single unit as well as in client-server pairs. It has extended functionality by using AT commands along with many extra features. It interoperates with common COM: port redirector software (such as Serial/IP).

The EtherPath provides telnet server functionality. That is, other telnet clients can telnet to it on any specific configured port and carry on bi-directional conversations with the device connected to the EtherPath's serial port.

The EtherPath may also be a telnet client. That is, a device connected to its serial port can force it to initiate a telnet connection to a remote telnet server by either raising pin 6 (usually RTS) on the RS-232 port or commanding a connection by sending the "ATD1.2.3.4:5" *dial* command. This connection can also be forced upon power-up if "forced pin 6" is configured.

The EtherPath may operate as both a telnet client and server. If the EtherPath is configured as a server (awaiting a connection from a client somewhere on the LAN), and the RS-232 connected device issues the proper command ("ATS0=0"), the EtherPath is forced into client mode and that device may command a remote connection with an ATD command (with the IP address/port number or without). After that connection is in place, it may be dropped by control line signal or upon command (+++ATH0 ATS0=1) to force the unit back into server mode.

The EtherPath may also be used as a raw TCP client or server. In this mode, it operates similar to the Telnet method, but does not filter Telnet commands out of the data stream. This mode is commonly used with operating with customer-written communications programs.

The EtherPoll when operated as a single unit:

The EtherPoll uses UDP/IP packets **without the Telnet protocol**. It is not commonly used as a single unit. It is normally used in client-server pairs, or broadcast polling multi-unit networks. It does not respond to AT commands. The EtherPoll does not operate with common COM: port redirector software (most of which require the TCP protocol).

When operated as a single unit, custom software is required for the workstations that connect to it as UDP packets are used. Telnet will not work to the EtherPoll.

The EtherPath when operated in Client-Server pairs or multiple units:



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The EtherPath may be used in pairs with one unit as a telnet client and another as a telnet server. The connection may be forced upon power up and may be persistent, or it may be upon demand by the device connected to the RS-232 port of the unit configured to be a client. The connection may be persistent, that is, it will re-establish the connection if it is broken for any reason.

The EtherPath may be used in multiple with one unit as a telnet client and others as telnet servers. The connections are established when the device connected to the client's RS-232 port commands the unit to connect with an ATD1.2.3.4:5 dial command. After that session is disconnected, a connection may be established to another remote by "dialing" a different EtherPath's IP address.

The EtherPoll when operated in Client-Server pairs or multiple units:

The EtherPoll may be used in pairs with one unit acting as a client and the other as a server. The data transferred between the two EtherPoll units is transferred using raw socket UDP connections, so there is no "established" connection between the units. As with a modem, there is also no guarantee that the data will be delivered, or delivered error-free (although if it goes through, it will be error-free as long as some packets aren't lost in transit). The EtherPoll is meant to be used with other equipment that has the higher transport layer functionality... the outside devices verify proper communications and request retransmission when needed.

The EtherPoll may be used in multiple-unit networks. Each unit may have up to 32 remote IP addresses configured as destination addresses. Every block of data is sent to all of configured remote units. This functionality makes the EtherPoll ideal for polling protocols commonly used in SCADA networks. The SCADA equipment (outside the EtherPolls) takes care of data integrity, polling protocol, and insures that if the data isn't delivered where required a retransmission is requested. This type of multiple drop network is commonly used in SCADA protocols such as DNP, DNP-3, MODBUS RTU, MODBUS ASCII, and most protocols that use asynchronous communications. It is a direct replacement for multi-drop radio and modem networks, and is transparent to the SCADA protocol.

The EtherPoll may be used in multi-unit networks as a broadcast device. An originating EtherPoll may be used to broadcast data to up to 32 remote EtherPolls. This may be used to broadcast information to electronic billboards or signs. In some installations, there is no data flowing in the reverse direction, although the EtherPoll provides for a two-way communications path.

Common Usage:

Basic Telnet server or client: Use the EtherPath. An exception might be when a server is required for UDP connections. Some traffic control installations have such a high volume of "connect/disconnect" sequences that connectionless UDP messages are preferred to TCP connections. Note that this requires custom networking software in the client to make a UDP "connection".

Nailed-up connection in a client-server pair: Use the EtherPath unless some special requirement forces the EtherPoll. Special requirements might be that UDP is desirable over TCP for some reason, or redundant connections are required for backup.

Polling multi-drop networks: Use the EtherPoll with up to 32 remotes for each host. This is the common polled SCADA system.



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Broadcast networks: Use the EtherPoll.

Redundant connections: For a dedicated client-server pair that requires a back-up host or redundant remote, use the EtherPoll. Each unit may be configured to broadcast its data to both a main and redundant unit, thus providing redundant hosts or remotes.