

GRAPHTEC Recorder/Logger Series

Ethernet General Instructions

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1 Overview

This document describes the capabilities of the Ethernet functions provided by our recorder and logger series, and how to use each feature.

2 Specifications

Protocols to be used

Layer	Protocol
Communication layer	TCP/IP, UDP/IP ^(*) , ARP, RARP, ICMP
Application layer (server)	HTTP ^(*) , FTP ^(*) , Original control command (TCP/UDP ^(*))
Application layer (client)	FTP ^(*) , NTP ^(*) , DHCP ^(*) , DNS ^(*)

(*) Not equipped by some models

Number of maximum connections: 20 connections across all protocols

Immediately after the restart, one for the HTTP server standby, one for the FTP server standby, and two for the command server standby (two for TCP/UDP) are already occupied.

3 Detailed descriptions

3.1 Details of communication layer

TCP/IP is normally used for communications.

In some cases, UDP/IP is used for special purposes such as network searches by broadcast and restarts of the Ethernet stack on the recorder/logger.

ARP and RARP are used to determine the routing in using IP protocols, and they are necessary functions when using IP protocols.

ICMP is used to notify information regarding the notifications and communications of errors in datagram processes.

3.2 Details of server protocols

HTTP server: HTTP server listen port: No. 80 (Fixed)
The server listens on port No. 80 for incoming connections. After a connection is created, the server newly listens for requests and data sessions. The maximum number of new sessions is 10.

FTP server: FTP server listen port: No. 21 (Fixed)
The server listens on port No. 21 for incoming connections. After a connection is created, the server creates a new connection in order to transfer data, when necessary. (In passive mode, the server listens for incoming connections in order to transfer data.)

Control command server: Listen port: No. 8023 (Factory default)
The server listens on the port No. set in the unit (No. 8023 by the factory default) for both TCP and UDP.
In a TCP connection, the server listens for a connection from a client. If the connection is established, any new connections will not be accepted until the connection is disconnected. Only one connection is enabled at all times. In the TCP connection, commands, which control the settings and operations of the recorder/logger unit, are communicated.
In a UDP connection, communications are always accepted since the UDP communication is basically a non-connection type. Broadcast is also accepted. In the UDP connection, communications are mainly performed for searching for recorders/loggers on the network, or for handling troubles on the network such as network restart.

3.3 Details of client protocols

FTP client:	<p>If the recorder/logger unit is provided with a backup function, the FTP client function can be used to save the data in an external FTP server. Set up an account that has permission to write to the FTP server side.</p> <p>Connections are created for control and data.</p>
NTP client:	<p>If the recorder/logger unit is provided with an internet clock correction function, the clock of the recorder/logger can be corrected by accessing an external clock server with the NTP client function.</p>
DHCP client:	<p>If a network automatic setting function has been provided, the network settings are performed by accessing the DHCP server. Immediately after the power is turned on, or when the network function is restarted, the network settings are obtained from the DHCP server.</p>
DNS client:	<p>When the FTP client and NTP client functions specify their respective servers by domain name, the address resolution is carried out via the DNS server.</p>