

# **GW-ETH-01 Datalogger**

## **User's Guide**

**FW v1.03**



## Description

Datalogger is a mode of the GW-ETH-01 gateway operation designated for data acquisition and sending via Ethernet. Refer to the GW-ETH-01 User's guide for more information.

Datalogger is intended for the following firmware and software versions:

- GW-ETH-01: v1.02
- GW-ETH-01 Tool: v1.01

It is not possible to communicate externally with the TR module inside the GW in the Datalogger mode. GW communication with the IQRF network depends on the application in internal TR module. All data sent via SPI from the TR module to the GW are stored in circular buffer in the GW. Every packet is equipped with numeric code and time stamp. Data can be freely read from this buffer via the HTTPS interface or user data can be sent via HTTPS to the TR module. Refer to the Datalogger User's guide for more information.

Buffer parameters:

- Buffer size 7 kB (7 168 B)
- Packet size
  - Serviceable data 1 to 41 B (fixed but user selectable)
  - Overhead 8 B

## Datalogger mode activation

The Datalogger mode can be activated in two ways:

1. Via the web server:



IQRF Ethernet Gateway

Status
LAN
Dynamic DNS
GW
Password
Time
Datalogger Test

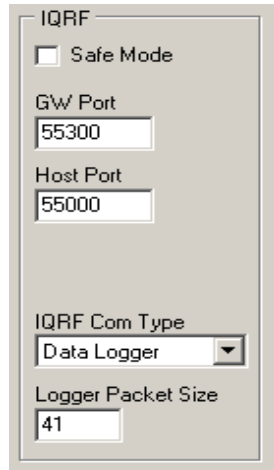
## GW Setup

### CAUTION:

Incorrect settings may cause the device to lose network connectivity. The saving will invoke device rebooting.

	<input type="checkbox"/> Enable Safe Mode
GW Port:	<input type="text" value="55300"/>
Remote Port:	<input type="text" value="55000"/>
IQRF Com Type:	<input type="text" value="Data Logger"/>
Logger Packet Size:	<input type="text" value="41"/>
	<input type="button" value="Save"/>

## 2. Via the GW-ETH Tool:



## Operation

To communicate with the datalogger, login to internal web server is required (like for GW configuration). Login as well as communication need the HTTPS connection. Data can be read from the internal web page *logger.htm* with corresponding parameter. For working with the datalogger several commands are available to be sent via the HTTPS protocol. Communication with the datalogger can be tested from a web browser or using the *Datalogger Test* page located at the GW internal web server. Source codes for all functions in the PHP language can be downloaded from the GW product web page.

## Commands

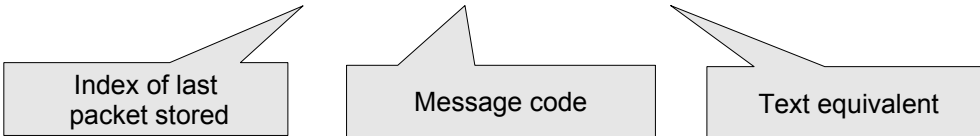
<ip\_address> IP address of requested GW. Host Name can be used in case of LAN.  
 <packet\_index> Index of packet requested (0000 – FFFE). FFFF is intended to detect the index of last packet stored (see the *Answer format - MESSAGE*). Lower and upper cases are allowed.

**Get last index** [https://<ip\\_address>/protect/logger.htm?record=<packet\\_index>](https://<ip_address>/protect/logger.htm?record=<packet_index>)

Detect the last packet stored. The <packet\_index> value must be FFFF. (Packets are indexed from 0x0000 to 0xFFFFE, no packet with index FFFF exists which is used for last packet detection.)

Example:

Command: `https://10.0.0.3/protect/logger.htm?record=ffff`  
 Answer: `#0191#FF0000000002#record not found#`

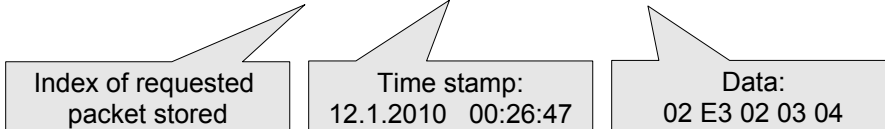


**Get record index** [https://<ip\\_address>/protect/logger.htm?record=<packet\\_index>](https://<ip_address>/protect/logger.htm?record=<packet_index>)

Get the packet with specified index stored in the datalogger.

Example:

Command: `https://10.0.0.3/protect/logger.htm?record=0410`  
 Answer: `#0410#120110002647#02E3020304#<br>`



**Get records** `https://<ip_address>/protect/logger.htm?dump`

Read the complete datalogger buffer.

*Example:*

```
Command: https://10.0.0.3/protect/logger.htm?dump
Answer:  #0000#120110003514#0031020304#<br>
        #0001#120110003516#0032020304#<br>
        #0002#120110003518#0033020304#<br>
        #0000#000000000000#0000000000#<br>
        ...
```

**Get records from index** `https://<ip_address>/protect/logger.htm?dump_index=<packet_index>`

Read all packet starting from specified index to the last packed stored.

*Example:*

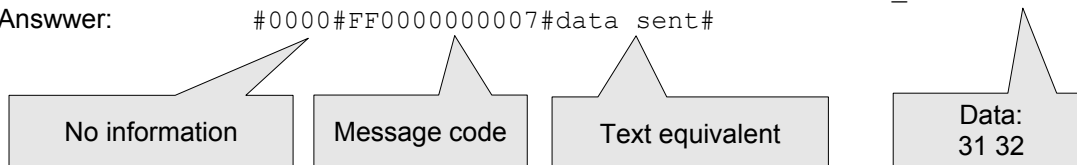
```
Command: https://10.0.0.3/protect/logger.htm?dump_index=000A
Answer:  #000A#120110003537#0031020304#<br>
        #000B#120110003539#0032020304#<br>
        #000C#120110003541#0033020304#<br>
```

**Send data to TR module** `https://<ip_address>/protect/logger.htm?send_data=<data>`

Send data to TR module in the GW. Data processing in the TR module depends on the application in it.

*Example:*

```
Command: https://10.0.0.3/protect/logger.htm?send_data=3132
Answer:  #0000#FF00000000007#data sent#
```



**Answer – OK** `#<packet_index>#<timestamp>#<data>#`

<packet\_index> Index of the packet stored, the same as in the <packet\_index> command.

<timestamp> Stamp of the time the packet was stored (see the example above). If the packet starts with the FF value a MESSAGE is concerned.

<data> Actual data in text representation of hexa values (see examples above). Data size (1 – 4 B) is specified by the *Logger Packet Size* in GW configuration.

**Answer – MESSAGE** `#<last_packet_index>#<message_code>#<message_string>#`

<last\_packet\_index> Index of the last packet stored (0000 – FFFE).

<message\_code> Numeric code of the message (FF0000000001 – FFFFFFFF).

<message\_string> Text representation of the message.

Message codes:

FF0000000001	„invalid command“ – (e.g. index out of range)
FF0000000002	„record not found“ – requested packet index not found
FF0000000003	„buffer is empty“ – no packet stored in the buffer
FF0000000004	„GW is not in data logger mode“
FF0000000005	„SPI write error“ – writing to the TR module failed
FF0000000006	„no data to send“ – missing data for the TR module
FF0000000007	„data sent“ – data sent to the TR module

## PHP functions

Datalogger PHP functions are available to download from [www.iqrf.org/downloads](http://www.iqrf.org/downloads). Application is demonstrated in included PHP demo. This demo allows to set up a bidirectional communication with GW-ETH-01 running in datalogger mode. The functions for accessing GW-ETH-01 and its TR module over HTTPS protocol are available in `libs/libiqrf.php` and released under the free GPL license.

Demo functionality (`index.php`):

- Get an index of the last stored packet
- Get a packet with specified index
- Read the complete buffer
- Incremental reading of the buffer
- Send data (HEX) to the TR module
- Send data (String) to the TR module

## Document history

- 110304 Updated for TR-52B. PHP functions available.
- 100113 First release.

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## Sales and Service

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