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1 Important and general information

1.1 Important information

Please follow these instructions before and during the use and application on any IPETRONIK product!

1.1.1 Safety and Warning instructions

Please follow the instructions and information as contained in the user manual!

1. The user can influence an electronic system by applying the IPETRONIK product. This might cause risk of personal injury or property damages.

2. The use and application of the IPETRONIK product is permitted only to qualified professional staff, as well as, only in appropriate manner and in the designated use.

3. Before using an IPETRONIK measurement system in the vehicle it has to be verified that no function of the vehicle, which is relevant for secure operation, might be influenced:
   - by the installation of the IPETRONIK measurement system in the vehicle,
   - by an potential malfunction of the IPETRONIK system during the test drive.

In order to avoid possible danger or personal injury and property damages, appropriate actions are to be taken; such actions have to bring the entire system into a secured condition (e.g. by using a system for emergency stop, an emergency operation, monitoring of critical values).

Please check the following points to avoid errors:

- Adaption of sensors to components of the electrical system / electronics, brake system, engine and transmission control, chassis, body.
- Tap of one or several bus systems (CAN, LIN, ETHERNET) including the required electrical connection(s) for data acquisition.
- Communication with the vehicle’s control units (ECUs), especially with such of the brake system and/or of the engine and transmission control (power train control system).
- Installation of components for remote data transmission (mobiles, GSM/GPRS modems, WiFi and Bluetooth components).

The products can be operated in extended temperature ranges greater 70°C and therefore the operator has to take safety measures to avoid any skin burnings on hot surfaces while touching the products.

4. Before directly or indirectly using the data acquired by an IPETRONIK measurement system to calibrate control units, please review the data regarding to plausibility.

5. With regard to the application of IPETRONIK products in vehicles during use on public roads the manufacturer and/or registered user of the vehicle has to ensure that all changes/modifications have no influence concerning the license of the vehicle or its license of operation.

6. User does agree to the instructions and regulations as mentioned above. In case the user does not agree with the instructions and regulations as mentioned above, he has to notify this expressly and immediately in writing to IPETRONIK before confirming the sales contract.
1.2 Terms and conditions

See IPETRONIK website for details: www.ipetronik.com

1.2.1 Legend of used icons

Tip
This icon indicates a useful tip that facilitates the application of the software.

Information
This icon indicates additional information for a better understanding.

Attention!
This icon indicates important information to avoid potential error messages.

1.2.2 Support

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2 IPEmotion RT data logger Quick Start Guide

2.1 Power supply and PC interface

The Quick Start Guide (QSG) covers the basic functions that are required to put your IPEmotion RT logger in operation. The QSG is based on M-LOG V3 and IPElog2 regarding the hardware structure. The logger requires a power supply in the range of 9 to 36 VDC. An Ethernet connection to the PC is also required to configure the logger with IPEmotion RT.UI, as described in section 2.3.

Example M-LOG V3

Example IPElog 2
The logger default IP-address of the PC Gigabit ETH interface is: 192.168.236.1. The logger is operating as a DHCP server. The LAN card setting of the PC should be set to automatic so that logger can assign an IP-address to the PC.

![Attention!]

Because of the DHCP server function, the logger should not be connected to any company network directly. This will cause network errors and IP-address conflicts.

PC LAN interface for automatic IP-address assignment

With any browser, you can access the logger status website via 192.168.236.1/state
Access to the status website via browser: 192.168.236.1/state/
2.2 M- and X-Module connection

There are several ways to connect M-Modules and X-Modules to your M-LOG V3.

2.2.1 M-CAN modules

The most common and standard interface is to use one of the two M-CAN connectors next to the power supply input. This M-CAN connector offers an output of up to 50 Watt. The last module of a CAN bus system must have a TERM connector to terminate the bus with a 120 Ohm resistor. If you use the M-CAN connector, CAN 1 is no longer available for other CAN bus measurements. CAN 1 is the only input that supports automatic hardware synchronization, which is explained in the software chapter later.

Example M-LOG V3

![Diagram of M-LOG V3 connection](image)

Example IPElog 2

![Diagram of IPElog 2 connection](image)
2.2 M- and X-Module connection

2.2.2 X-LINK modules

The ETH input (ETH 1) is dedicated to interface and detection of X-Modules. The IP-address of this ETH 1 interface is 192.168.232.1. The X-LINK connector to IPELog2 and M-LOG V3 is supporting 1.3 A power output at 12 Volt. This corresponds to about 15 Watts. It is a limited power supply, to cover only a few modules. Therefore, a special Y-cable was developed for M-LOG V3, which provides power from the M-CAN interface. It is not mandatory to terminate the X-LINK network with a termination plug. However, to protect the input socket from dust and water, it is recommended to add a termination plug.

Example M-LOG V3

Example IPElog 2
2.3 IPEmotion RT.UI software

2.3.1 Logger detection

To configure the data logger, you need to install the IPEmotion RT.UI desktop software. The software is available for download from the IPETRONIK website: https://www.ipetronik.com/ The Ethernet and LAN cable connection between the logger and the computer must be established. In addition, the logger requires a power supply of 9 to 36 V DC to function properly. The green and yellow LEDs next to the power socket must be lit. The LED codes are explained in section ".

![Deskop icon](image)

TESTdrive customers must also use the new IPEmotion RT.UI desktop icon to configure their RT loggers.

![RT sticker on the logger](image)

When you have started the software you need to select the SIGNALS workspace in the ribbon. In the SIGNALS workspace the measurement configuration is created.

![Detect logger and synchronize hardware](image)
When you run the Detect and Synchronize function, the software searches for the logger and synchronizes all connected hardware modules on the CAN and ETH interfaces. This is very convenient when you start your logger configuration from scratch.
The detect function also retrieves the serial number of the logger. If you switch to the License dialogue, you get an overview of the licenses and functions activated on the logger and on the PC.
2.3.2 Hardware synchronization

If you have connected M-CAN or X-LINK modules or an USB camera, after you initial hardware detection as described at the beginning of the Quick Start Guide, you must perform the hardware synchronization function. The system will now search for all modules and systems connected to the logger, provided that the components support hardware detection. Hardware detection is e.g. not possible for IP cameras. The synchronization process also detects when modules that were previously connected to the logger are missing, or when new modules have been physically added.
After the hardware synchronization you will see all detected modules.
If you press the play button you can also see online measurements to check the values for plausibility.
2.3.3 Data storage and retrieval

At this configuration stage, the logger is not yet storing any data. In order to get the storage enabled, you must change the ACQUISITION workspace. Here you must create at least one storage group. The basic licensing package is supporting the configuration of one storage group. Use Drag & Drop to add channels to the storage group. The logger will start with the data storage immediately when the yellow LED above the power connector is active. There is no need for the user to interact with the logger to get the "automatic default" storage process up and running. When you define a triggered data storage the logger will only store data when the trigger condition is true.

After configuring the storage group you need to initialize the logger with the modified configuration. Any online data display in IPEmotion RT.UI software has no impact on the storage process of the logger. Data storage is happening on the logger side. No data files are created on the PC software.
To retrieve data files from the logger, switch back to the SIGNALS workspace and choose the Import or Move Data File function. The function is only enabled if you select the logger in the tree. The Open File dialogue guides you to the standard storage directory.

The default directory is called StorageData.
Finally, you can import the data files into the ANALYSIS workspace and, for example, move the channels into YT charts using drag & drop.