IPETRONIK

IPEMOTION
Software

IPEmotion_PlugIn_IPETRONIK_FlexRay_Extender_V01_00_00

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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: https://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 PlugIn overview

2.1 PlugIn description

The FlexRay Extender PlugIn is supporting the FlexRay Bus measurement together with the FlexRay Extender Hardware. The Plugin is developed to perform signal based measurements together with IPEmotion. However the FlexRay extender hardware is supported also for IPElog2 and M-LOGV3 data loggers together With the TESTdrive data logger software. The FlexRay extender is not supporting any FlexRay traffic measurements for logger or PC based setups.

2.2 PlugIn installation

In order to use the PlugIn together with IPEmotion you need to install it. The PlugIn is available for download from the IPETRONIK website: https://www.ipetronik.com/ When you have installed the PlugIn, you need to launch the IPEmotion software. Then you need to access the application menu and open the OPTIONS. In the OPTIONS you can activate the PlugIn as indicated below.
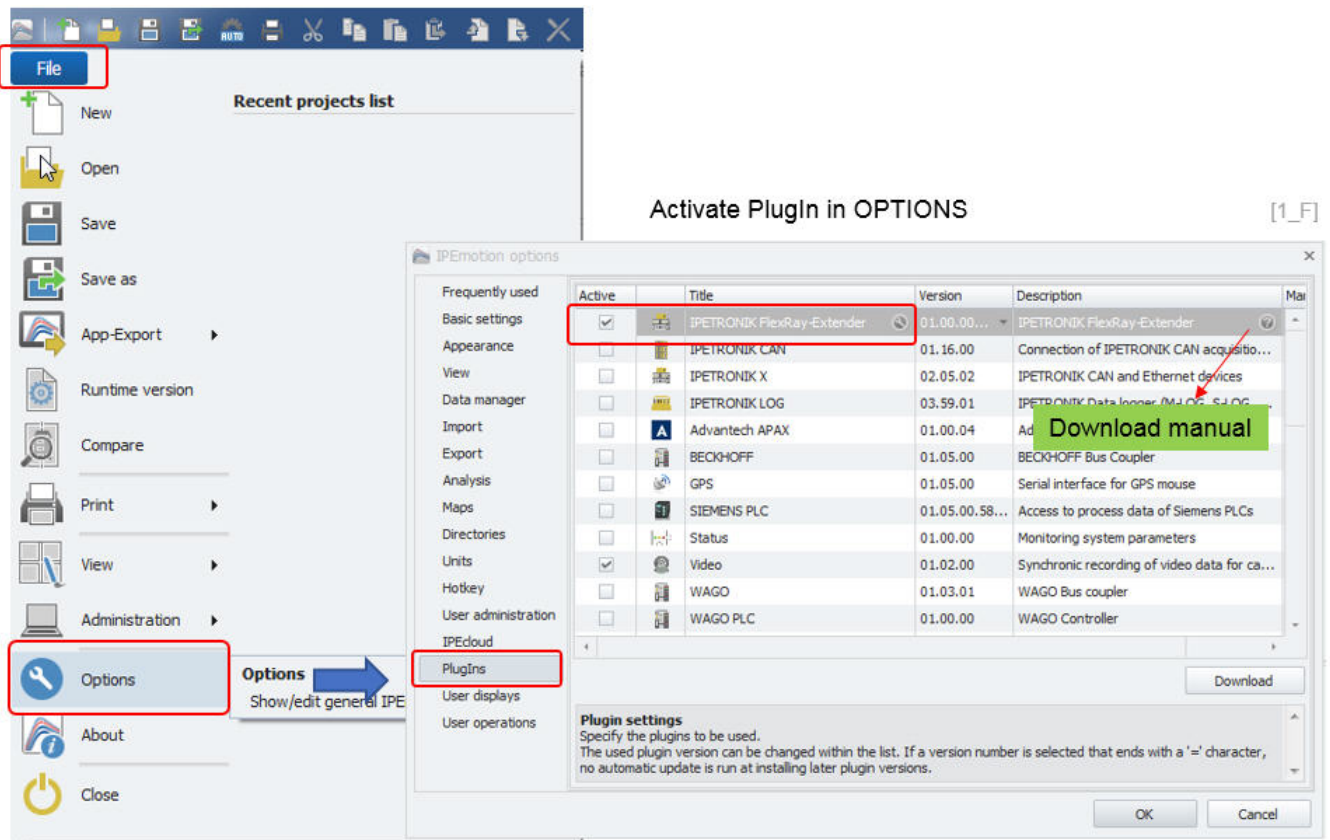
The PlugIn is supporting the following operating systems:
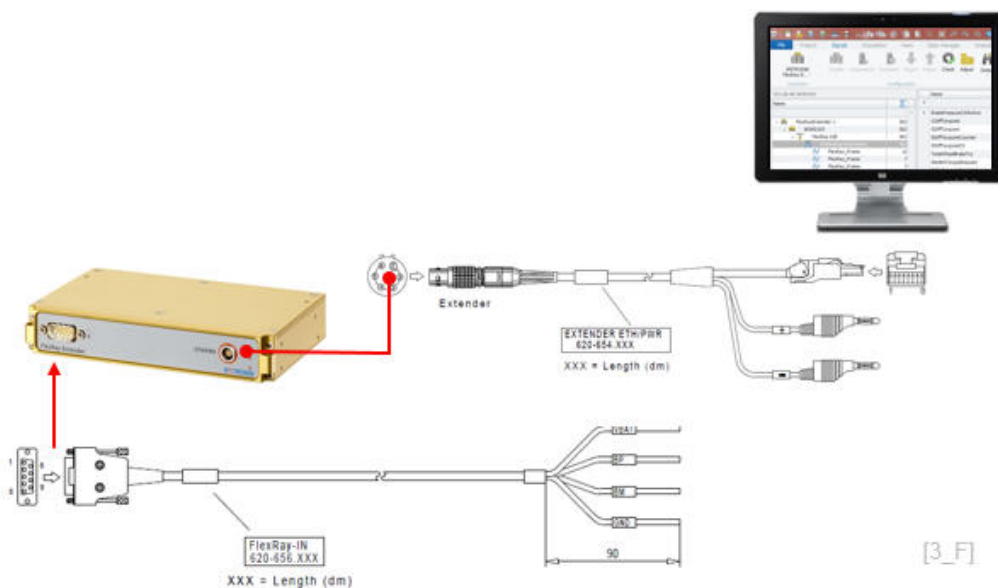
► 32 bit

3   PlugIn configuration

3.1   Functional architecture

In order to use the FlexRay extender PlugIn you need the FlexRay extender hardware. The hardware is interfaced to the Ethernet interface of your computer.


[2_F]
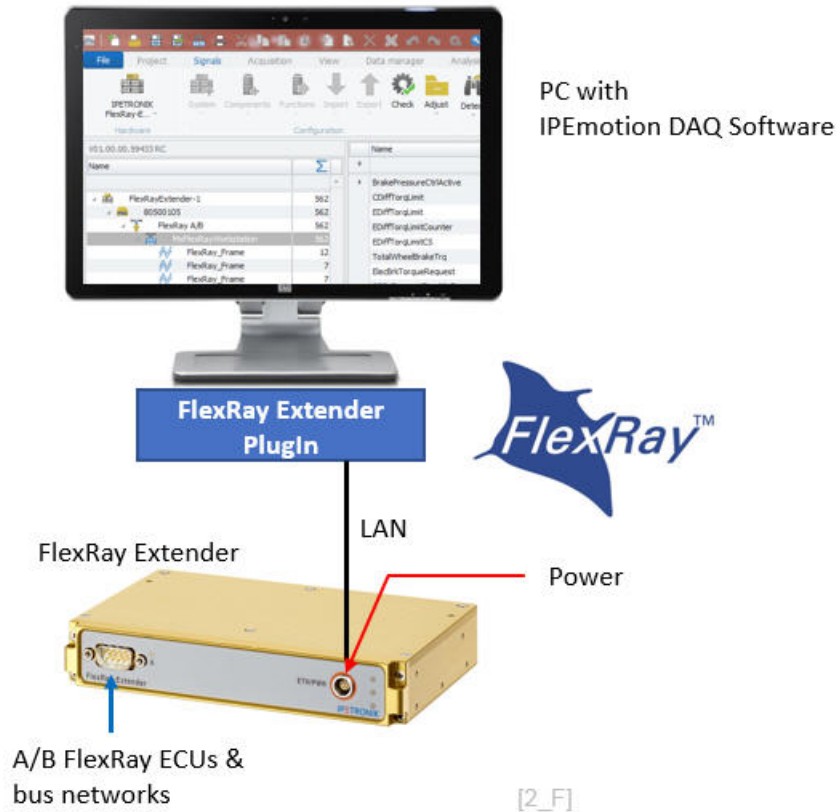
The interface cable between Extender und Laptop is

► 620-654.xxx

► 620-656.xxx (Input cable to interface to the FlexRay network)

[3_F]

3.2   Creating interface systems

The PlugIn for the FlexRay extender is supporting an automatic hardware detection. The Extender is providing a DHCP server function. The LAN interface of your computer must be configured for automatic IP-address assignment. It is not possible to operate several FlexRay extenders on one LAN interface because all extenders are using the same factory default IP-address which cannot be changed.
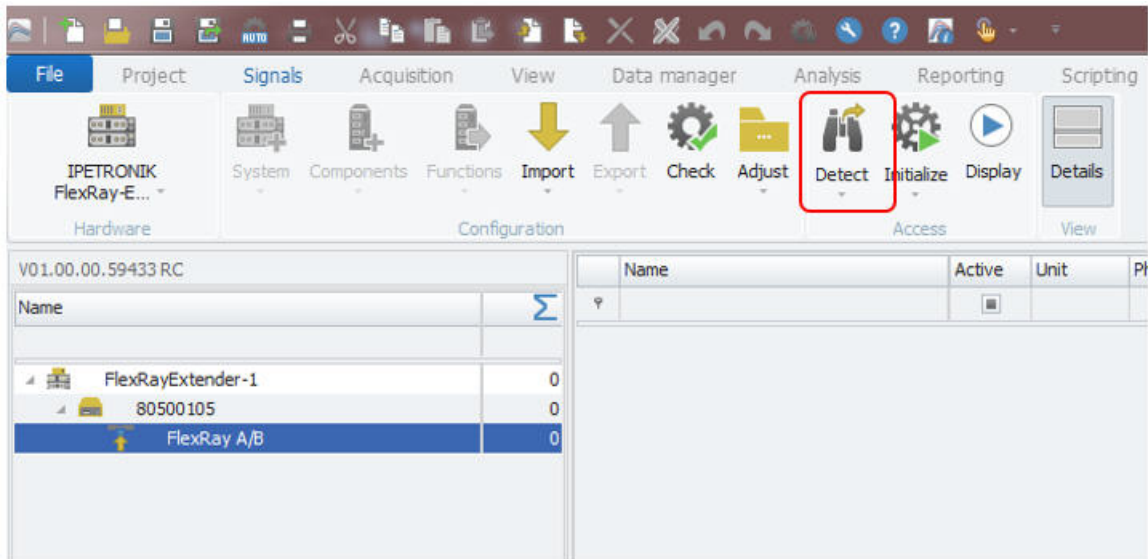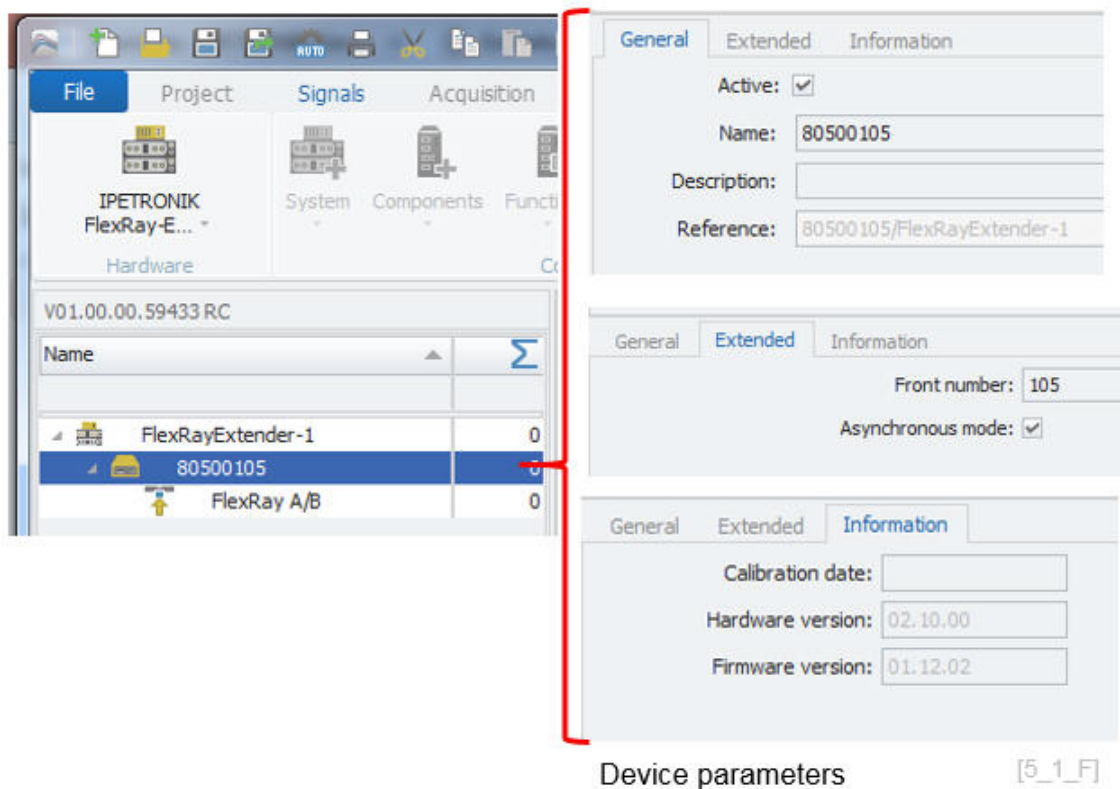

Automatic extender hardware detection   [4_F]

When the hardware is detected you can import on the extender level the following description files:
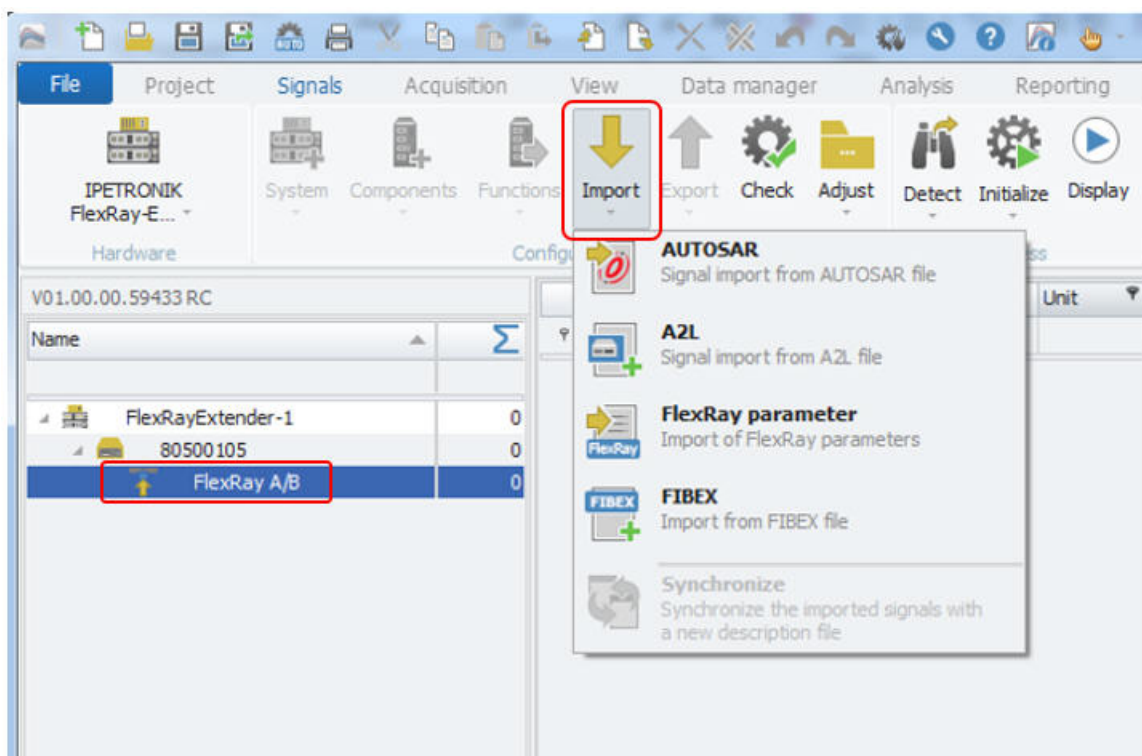
Import description files   [5_F]

▶ Autosar

▶ A2L

▶ FlexRay Parameter

▶ Fibex

On Extender level you have 3 tab sheets.

Device parameters   [5_1_F]

▶	General	Configuration of interface name and description.
▶	Extended	On is tab sheet you can define the front number of the device in the case of a dry configuration with out an y hardware connected. Also you can activate the Asynchrony mode. When this check box is activated the extender will automatically pull out from the Flex-Ray network the correct communication parameters. This setting is helpful when try to setup your measurement on networks with unknown network parameters. The Asynchronous mode requires that the raw data received by the extender can be correctly processed.
▶	Information	In this table sheet you will find the last calibration date, firmware and hardware versions.

3.2.1   Access to description file and signal parameters

In FlexRay extender Interface level you can access via right klick on the interface the description file properties.

FlexRay properties
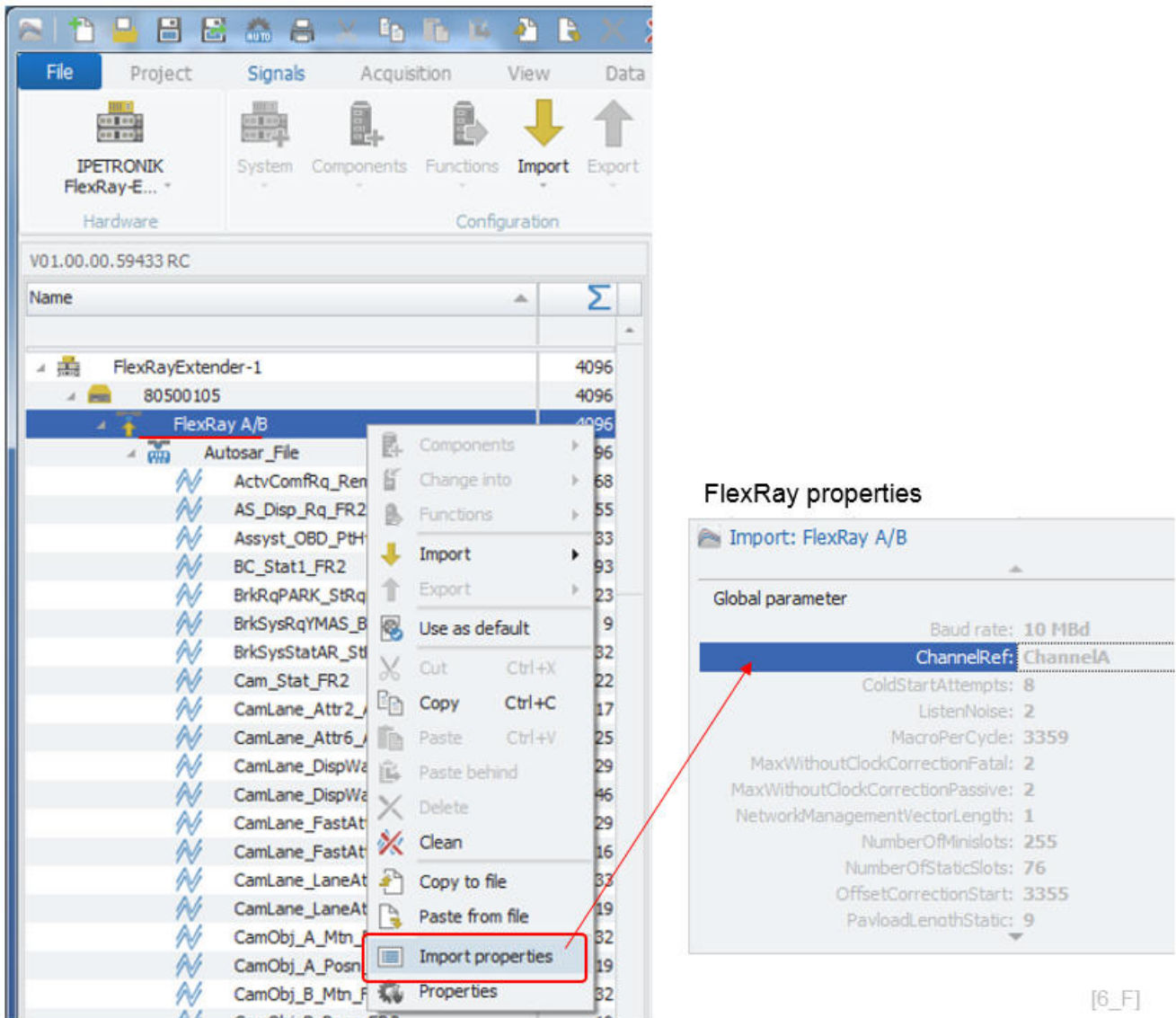
[6_F]

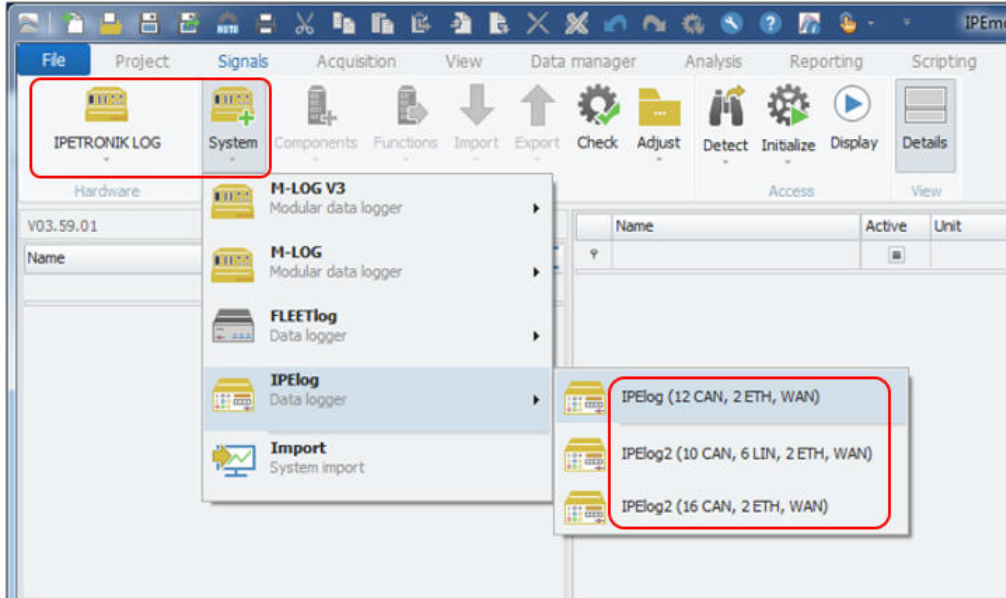In the same way with right klick on the signal level you can access the signal properties.
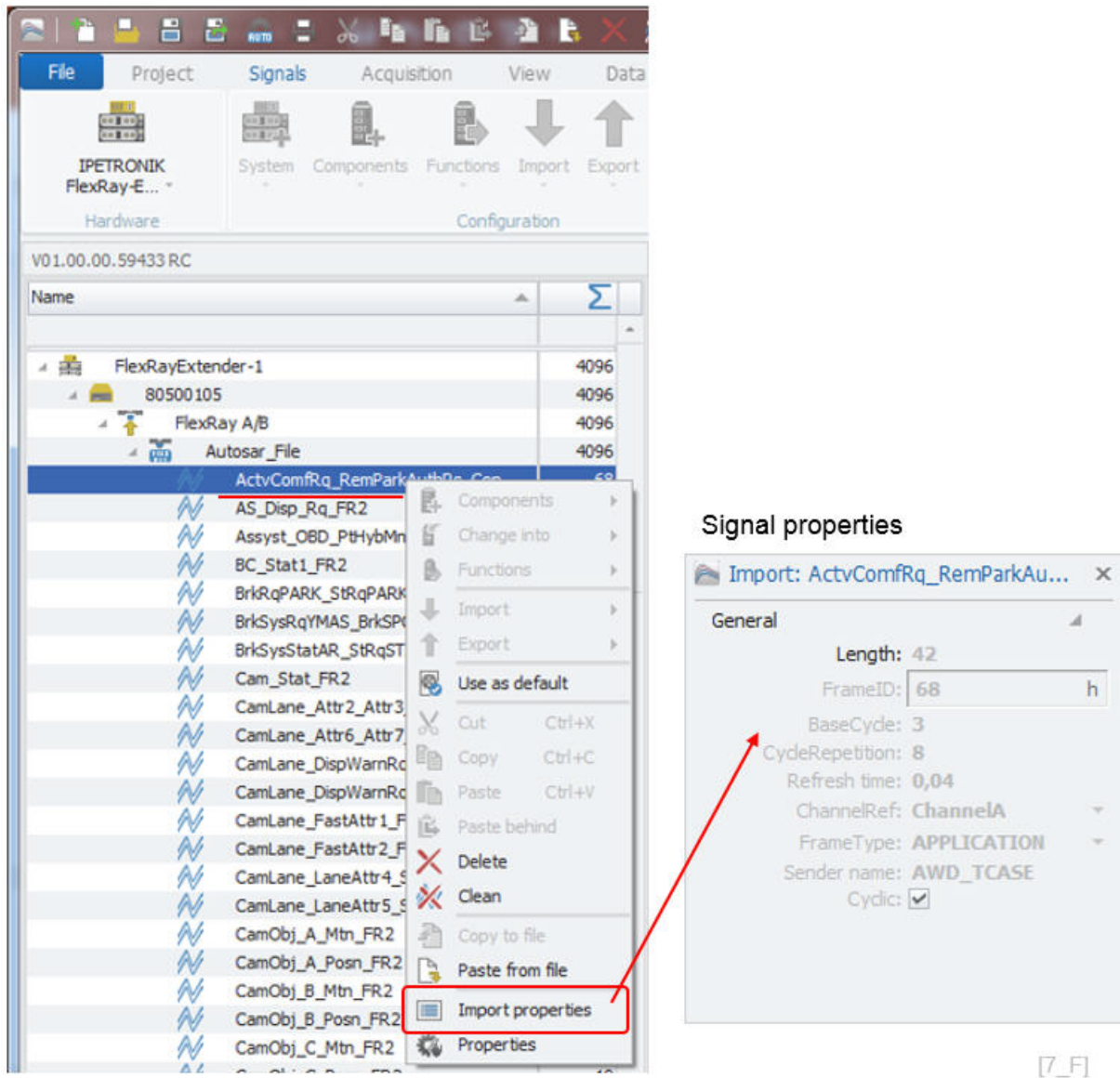
# 4   Interface FlexRay Extender to a data logger

4.1   IPElog2

The extender is also supported for IPElog2. In order to configure the extender you need to activate the IPETRONIK LOG PlugIn for data logger configuration.

Create IPElog system   [10_F]

IPElog2 has 2 Ethernet inputs. One input is dedicated to the X-LINK system and on this interface on connection cable to the FlexRay Extender is available. Therefore you need to create the FlexRay extender on the ETH interface. The media type is set to auto or to 100 Mbit.
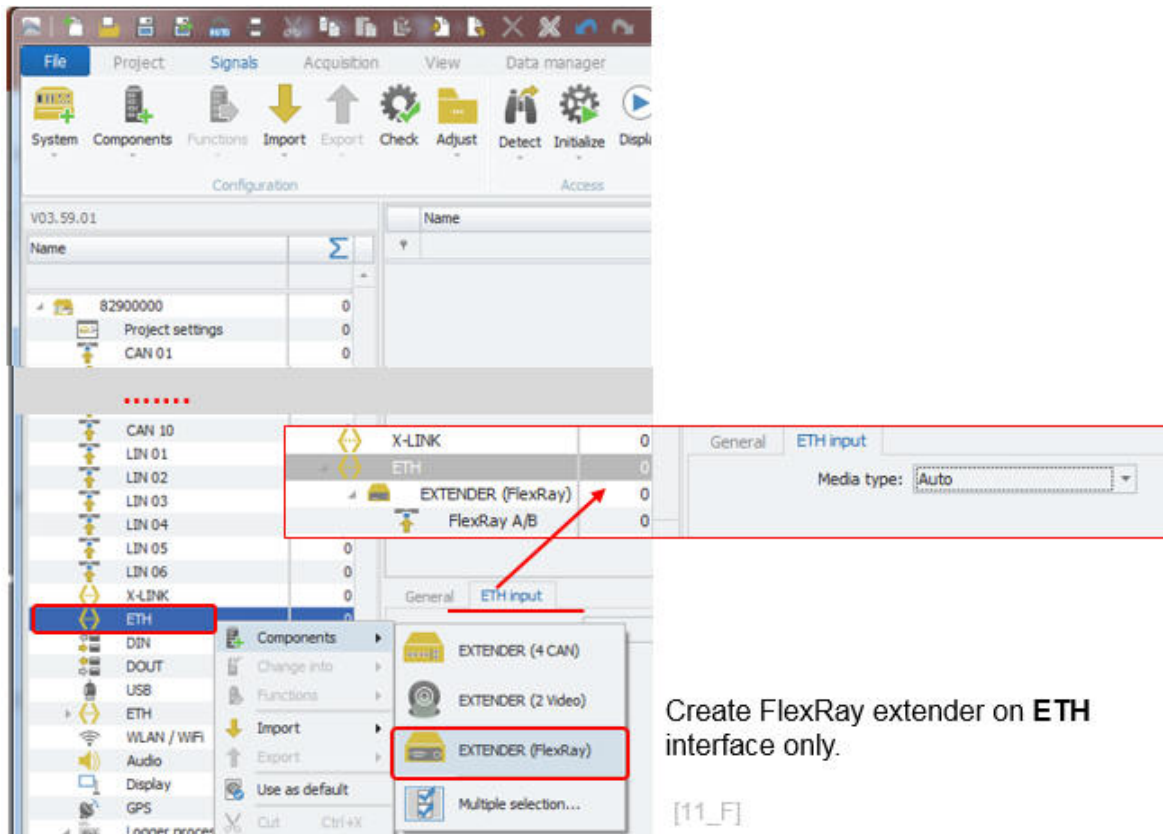
Create FlexRay extender on **ETH** interface only.

[11_F]

When the extender is created you can import the description files for you measurement.
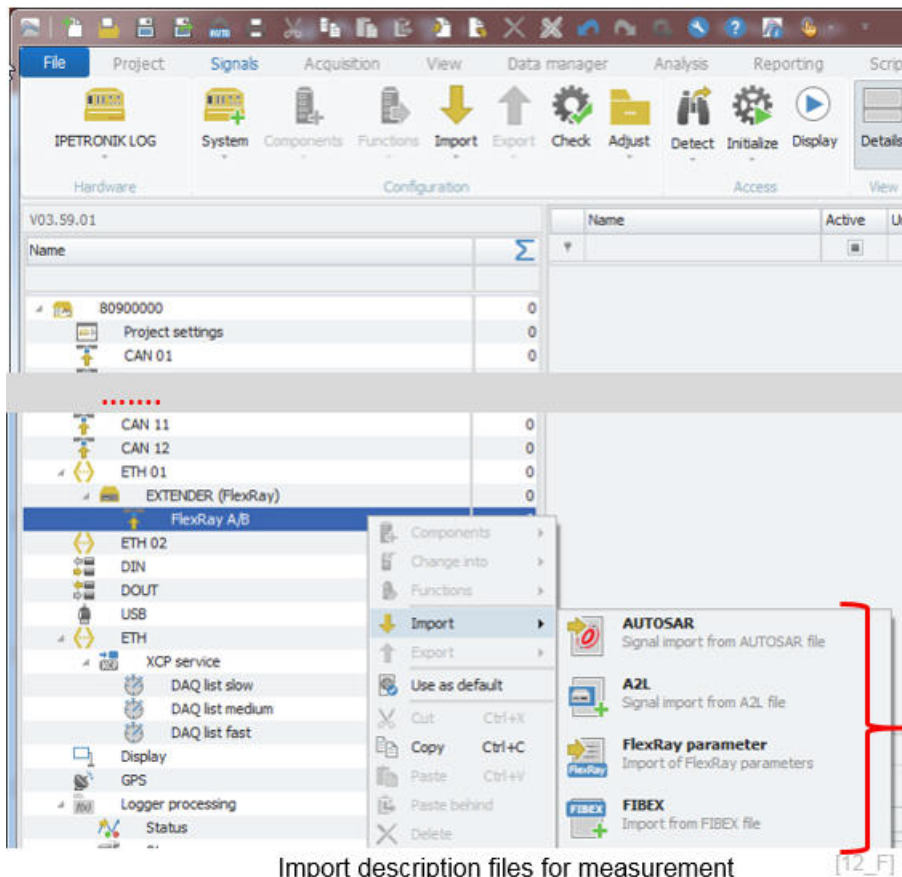
Import description files for measurement [12_F]

The following diagram shows the interface cabling between IPElog2 and extender. The required cable is:
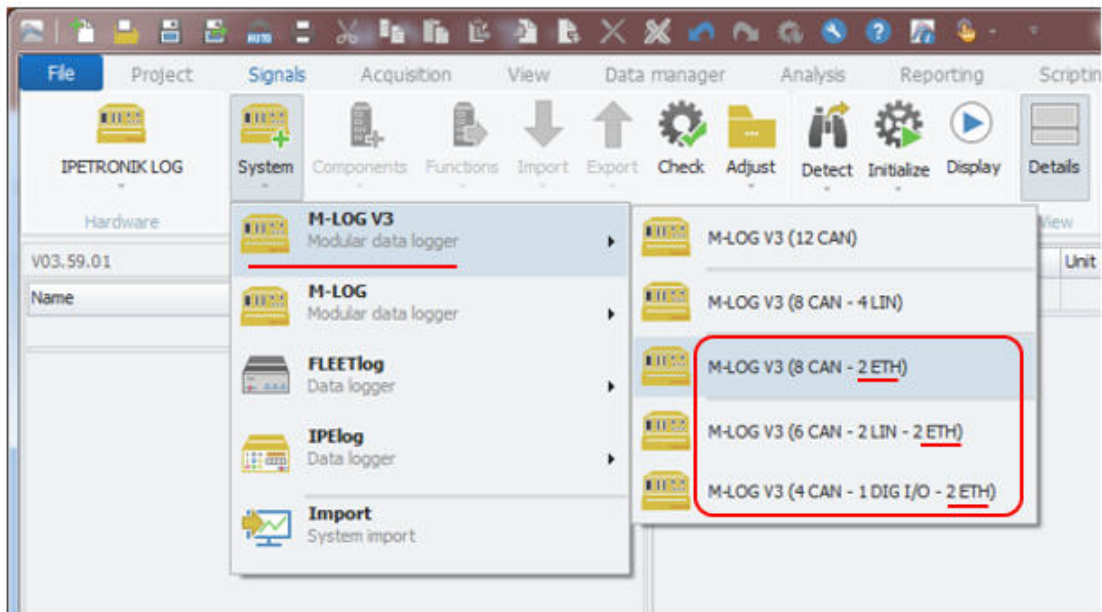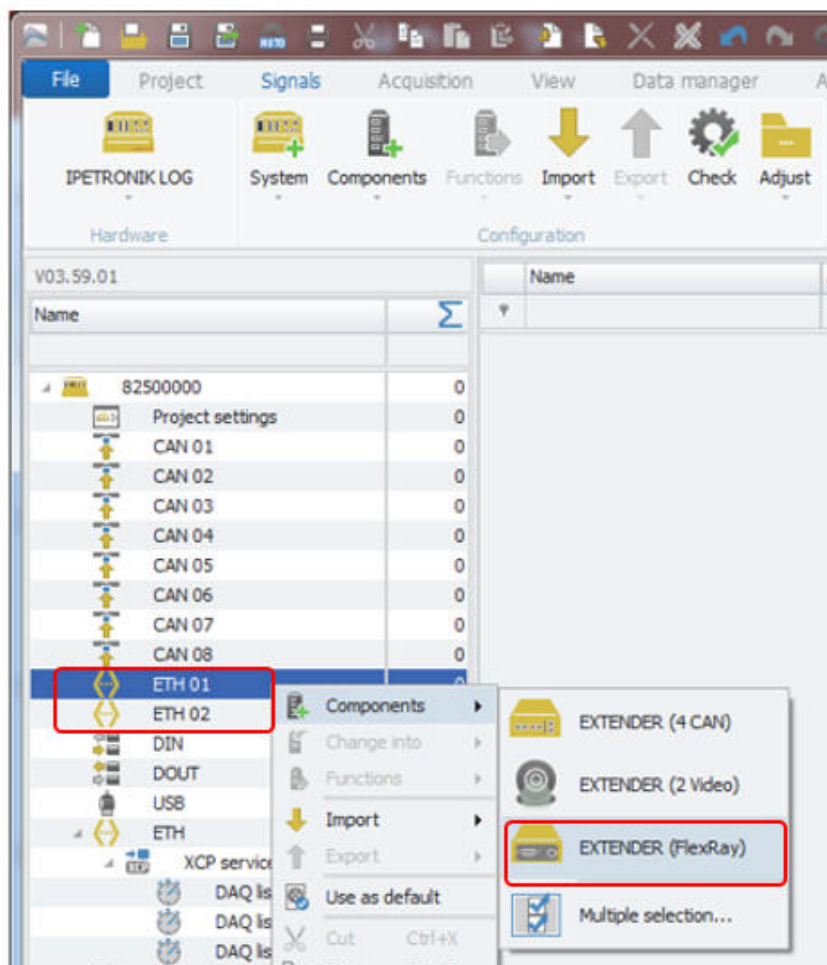
▶ 620-696.xxx

[13_F]

4.2   M-LOG V3

To use the FlexRay extender with M-LOG V3you need to have a logger with Port replicator PR8 which includes 2 ETH inputs.
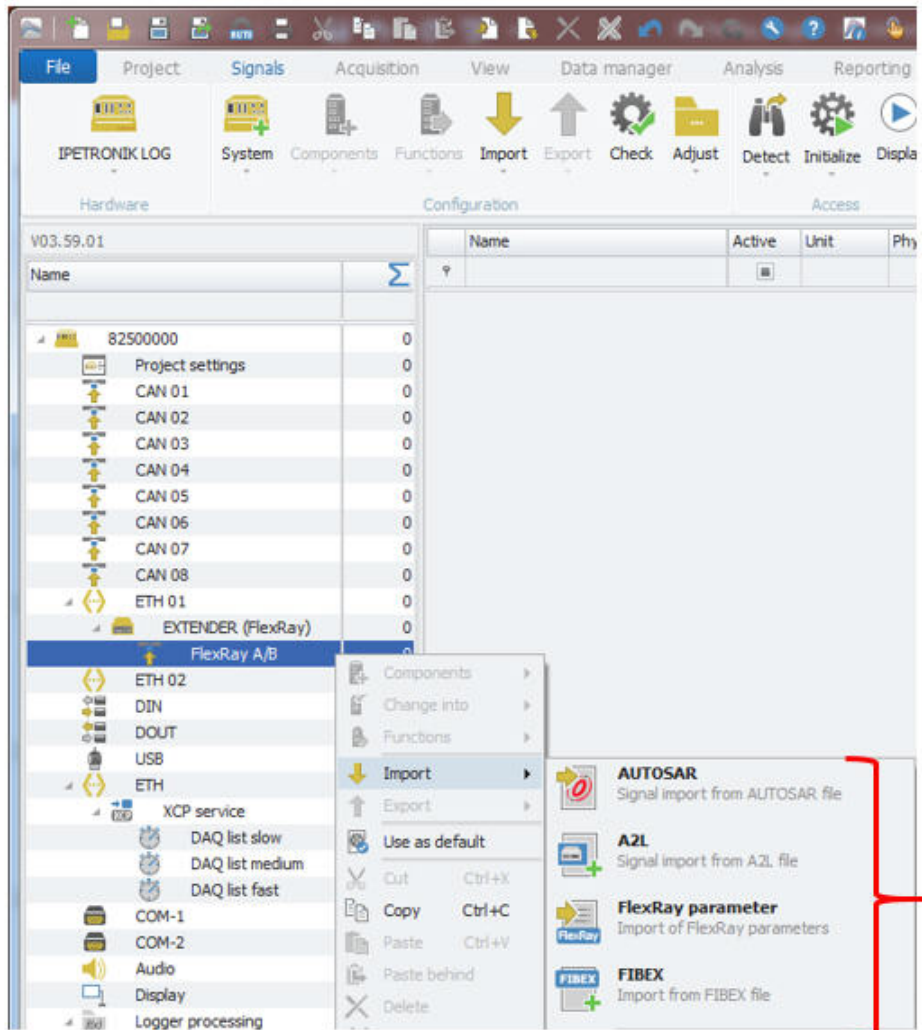

Create M-LOG V3 with ETH inputs   [14_F]

On any of the 2 Eth inputs you can create a FlexRay extender unit.

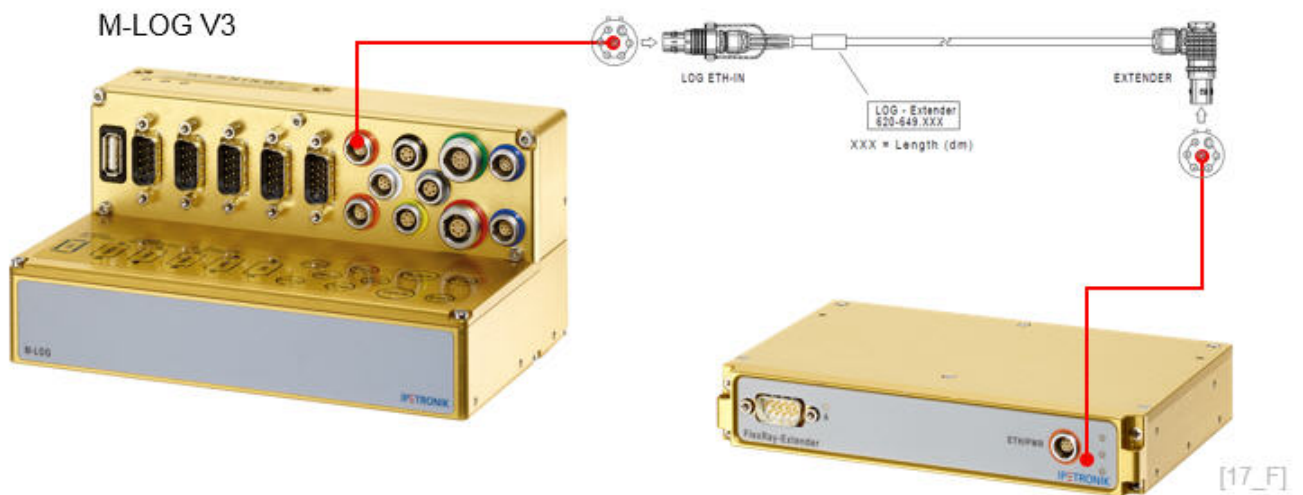Create FlexRay extender on any **ETH** interface.   [15_F]

On the FlexRay interface you can import the description files.

Import description files for measurement   [16_F]

The following diagram shows the interface cabling between M-LOG V3 and extender. The required cable is
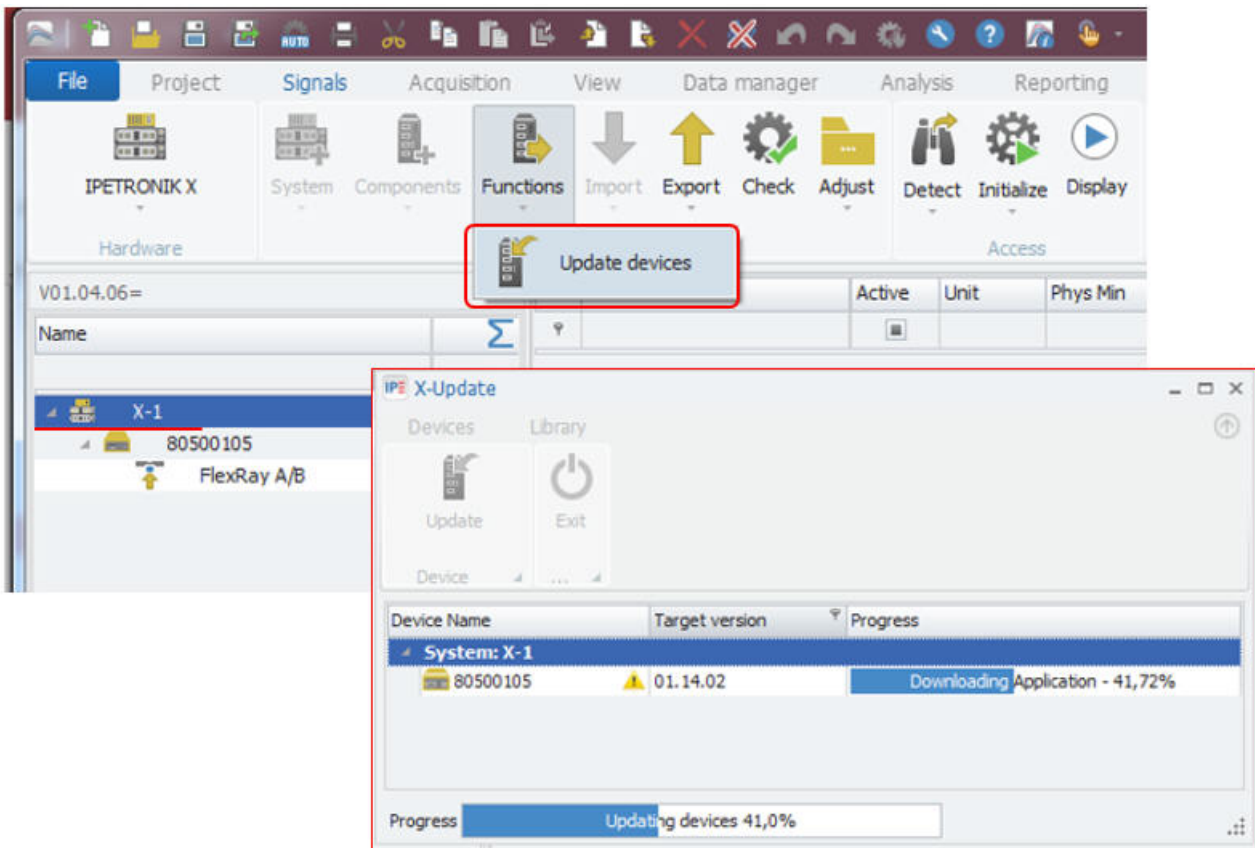
► 620-649.xxx

[17_F]

5   Firmware udpate procedure

The firmware update is currently not supported in the FlexRay Extender PlugIn. However, you can update the device FW through a previous IPETRONIK X-PlugIn version V01.04.06.

Firmware update   [20_F]

After the update you need to reboot the device. A corresponding message is provided during the update process.

6   LED blink codes

The following LED codes are supported by the device.

Status-LED	Description
off	No power supply
green permanent	Ready
yellow permanent	Active measurement
yellow 1 Hz 50% / 50% blinking	Ready for measurement
yellow 5 Hz 50% / 50% blinking	Firmware update in progress
red permanent	Error (measurement, firmware update)
red 1 Hz 50% / 50% blinking	Bus overload, power down device

Channel-LED	Description
off	No signal
yellow blinking	Bus activity

LED codes   [21_F]

Author FOT