

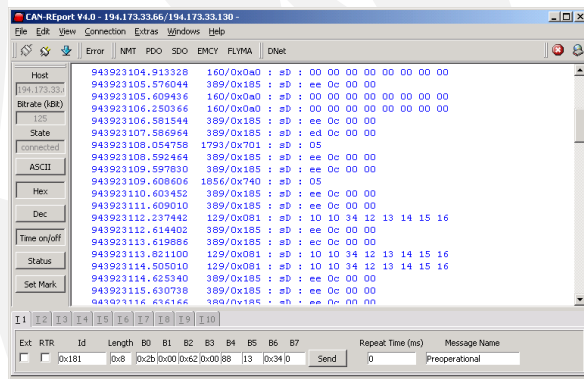
CAN Analyzer - CAN-REport

Overview

The CAN-Analyzer CAN-REport is an efficient and versatile tool for analysis and commissioning of CAN-based networks according CAN 2.0A and 2.0B, like CANopen and DeviceNet.

The built-in scripting capability allows to use it universally at development and test of CAN devices besides the normal possibilities of displaying the received CAN messages. It is especially useful in the field of industrial CAN networking.

The separation of hardware-interface (CAN access) and visualization software allows the usage in TCP/IP networks.

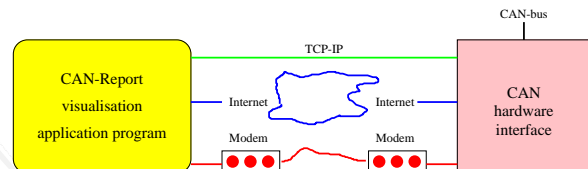


Description

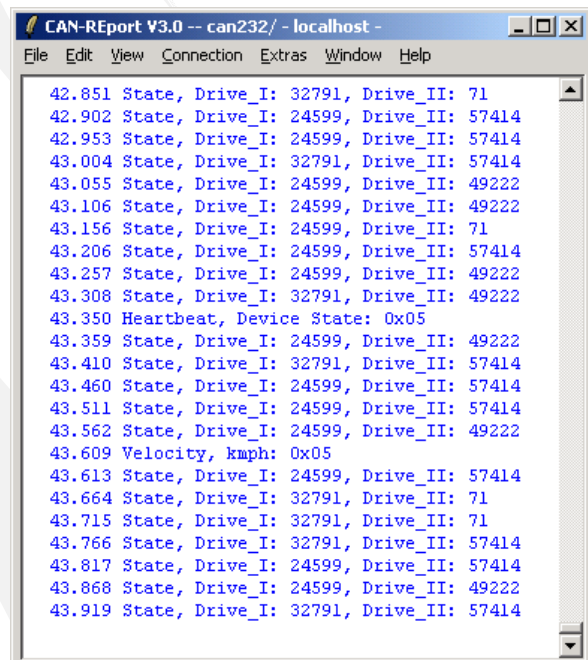
In the standard equipment the CAN-REport already has a lot of efficient basic functions like different modes of online observation of the bus traffic, transmission of unique or cyclic CAN messages, trigger inclusive pre- and post-trigger logging as well as the recording of CAN messages and storing it to log files belong to this purpose. Log files can be loaded again and interpreted with activated extensions.

The analyzer CAN-REport consists of the CAN hardware interface and the visualization software. Both are connected as server and client by a standard TCP/IP network connection. This separation allows to use the CAN interface as a remote interface, ie. both parts can be located at different computer systems. Remote monitoring of CAN networks is

possible without additional or modified software over LAN, dial or internet connections.



CAN interfaces are currently available for USB, ISA, PCI, PC-104, parallel port, serial port, like "Lawicel CAN232", or an Ethernet interface like the EtherCAN and IGW900 of *port*.



Plugins

Supplementary software modules provide extended functionality like service and protocol dependent interpretation of CAN messages. For the higher layer protocols CANopen, DeviceNet and J1939 a service dependent protocol interpretation is available.

The CANopen plugin displays CAN messages of the services:

SDO — PDO — NMT — EMCY — Flying Manager in separate windows. Moreover the display of the CANopen plugin can be tailored with the settings for "Node Names", "PDO Mapping" and "Emcy Mapping". This settings are saved project-oriented and can be loaded again. Sending of CANopen messages is supported by additional commands.

The DeviceNet plugin allows not only the interpretation of protocol messages but also the interactive input of requests on DeviceNet nodes, e.g. object attributes can be read and written.

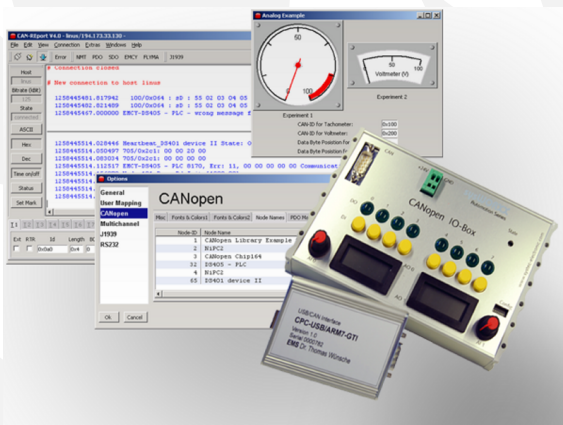
Another additional module allows the analysis of redundant networks. With two CAN interfaces it is possible to analyze CAN messages simultaneously of two CAN networks. CANopen Maritime networks are important applications with redundant CANopen networks.

For logging and protocol analysis of J1939 networks the J1939 plugin is available. The data contents are presented in human readable text as bit and byte values depending on its meaning within the protocol. Besides the interpretation of received CAN messages J1939 specific messages can be sent with the scripting language Tcl/Tk. The PGN and data is passed to the function and the plugin puts together the CAN message and sends it.

Programmability

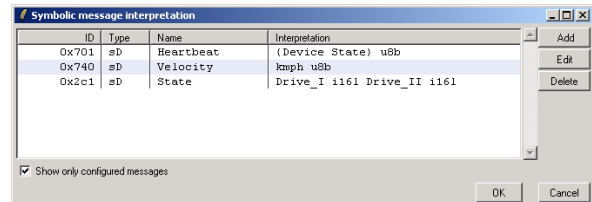
For the interpretation of company internal protocols a plugin can be developed and loaded into CAN-REport. Such a plugin is realized with the builtin scripting language Tcl/Tk and is simplified by provided functions. This mechanism allows it to simulate complete devices that utilize the CANopen, DeviceNet or a user specific protocol.

With the scripting language also elements of the graphical interface can be extended to match individual needs. It is possible to use provided or own graphical objects to create test and control applications. With the help of the multifaceted possibilities for displaying and reporting data test sequences can be carried out automatically even from a remote working place.



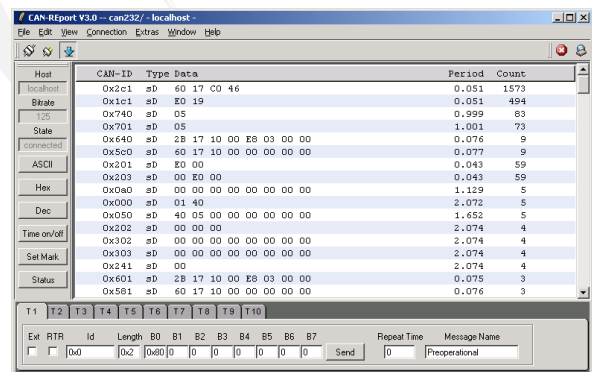
User Mapping

To get a simple and clear assignment of messages, they can be linked to a symbolic name. Not only every message but also the contents can be assigned to different identifiers, and interpreted according different data types. The integrated Tcl script support allows the very flexible extension of this mechanism.



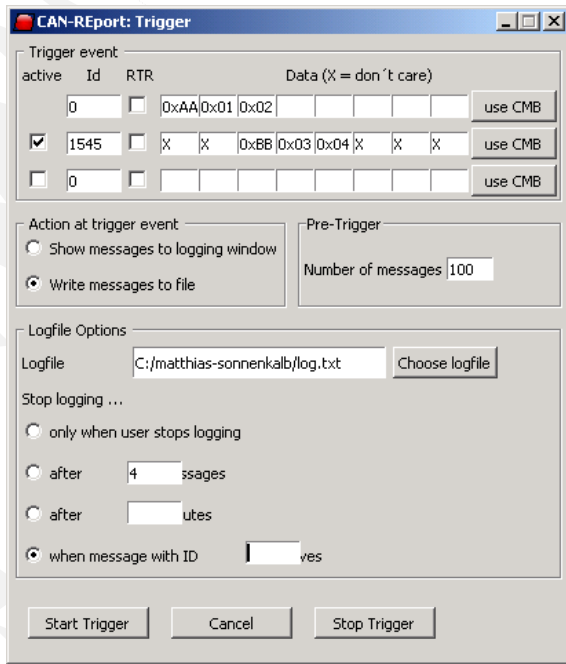
Object View

The object view is another representation form of CAN messages. Different than at trace mode, selected messages always remain visible and can be watched comfortably.



Trigger

Furthermore CAN-REport provides the trigger functionality to wait for specific CAN messages and continue logging after the specific CAN message was received. The trigger dialog consists of the three parts *Trigger Event*, *Action at trigger event* and *Logfile options*. Up to three different CAN messages can be specified as trigger.



Interactivity

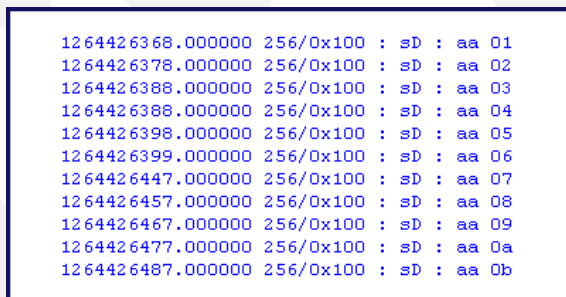
With the help of the integrated console convenient commands for accessing the CAN network interactively are available. These commands can be used in test scripts. Commands as `wr` for the sending of messages or `wait` for the synchronization with CAN messages on the network belong to this purpose.

With the following command sequence:

```
while { 1 } {
    wait 1799
    wr 0x100 0xaa [incr val]
}
```

the following message sequence can be observed:

The commands can be combined into sequences or procedures. All semantics of modern high level languages are available.



Particularly for commissioning and error analysis a precise time resolution of the received CAN messages at the network is necessary. The time represented by CAN-REport is influenced only by the used hardware. Time resolution up to 1 µs can be achieved by using CAN interface boards under the Linux operating

system. The available recording functions allow to store the results of entire test runs, but also the content of logging windows, in separate files.

port can perform special adaptations to the GUI or behavior to meet special customer requirements for service or assembly testing.

Advantages

- CAN interfaces of different manufacturers
- support of remote monitoring of the CAN bus
- expandable for CANopen, DeviceNet, redundant CAN networks and propriety applications
- Trigger with pre- and post-trigger
- scriptability with Tcl/Tk (<http://www.tcl.tk/>)

System requirements

- Operating System: Windows™ 2000, XP, Vista
LINUX™
- Processor: Pentium or later
- RAM: 128 MByte
- Harddisk Space: 10 MByte

Ordering Information

- 0580/10 CAN-REport-W (Full version Windows™)
- 0580/20 CAN-REport-L (Full version LINUX™)
- 0580/11 CAN-REport CANopen Plugin
- 0580/12 CAN-REport DeviceNet Plugin
- 0580/13 CAN-REport Multi Channel Plugin
- 0580/14 CAN-REport J1939 Plugin
- 0580/16 CAN-REport RS232 Plugin