

UniCAN

- Universal CAN recording device for**
 - long-term control, troubleshooting
 - acquisition of measurement data
- Removable ATA Flash Card up to 2 GByte,**
easy data exchange with notebooks
- Variable filter- and trigger conditions**
- Robust, compact, highest data security**
- Extended temperature range -40°C to +85°C**
- Easy operation with UniCAN Manager**
– Vector database connection
- Data analysis with MS Excel, DIADEM,**
ETAS and Vector Tools
- Option: Remote access via GSM**



UniCAN Professional is a flexible **diagnosis and measuring system** for 2 separate CAN-buses. A removable ATA Flash Card makes UniCAN perfect for mobile applications.

UniCAN Professional can be used flexible to record complete **messages** or **measuring data**. For definition of filter and trigger conditions a configuration software is available, that includes an interface to the Vector database.

CAN-bus interface

UniCAN Professional supports **CAN 2.0B (active)**. The device has two CAN-bus controllers. Each can be equipped with a transceiver for **High-Speed CAN-bus** (ISO 11898) or **Low-Speed CAN-bus** (ISO 11519). Optional Single Wire CAN and others as well.

Fields of Application

The universal design makes UniCAN suitable for all fields of CAN data acquisition, long-term monitoring and diagnosis:

- **Automotive Systems**
- **Agricultural Machinery, Construction Equipment**
- **Automation**

Remote Access via GSM

UniCAN Professional supports optional the remote access and device configuration with an external **GSM modem**. The Windows software UniCAN Manager supports the central management and operation of UniCAN devices, that are installed in the field.

Alternatively UniCAN Professional can be operated by a **board computer** with serial interface. For integration in own applications UniCAN Manager can be activated as batch without user interaction.

Secure Data Storage

The device is protected by a **robust metal casing**. The front cover guarantees a fixed position of the ATA Card, even under vibrations.

ATA Flash PC Cards from SanDisk are supported because of their proven reliability under rough conditions. For **long-term data acquisition** ATA Flash Cards up to **2 GByte** are available.

After a voltage breakdown or removal of PC Card, an **automatic restart** of the recording occurs. After this all previously recorded data are completely available.

CANini and CANdb ¹⁾

CANini is part of the UniCAN Professional delivery package. As an independent system CANini provides the capability for definition and management of CAN communication data. This includes the following data items:

- ✓ **Description** (e.g. "RPM")
- ✓ **CAN identifier**
- ✓ **Data type** (e.g. word, byte or nbits)
- ✓ **Position** within the CAN message
- ✓ **Conversion parameters** between raw value and physical value
- ✓ **Physical unit**

CANini has an interface to **UniCAN Manager**, where the recording parameters are defined on basis of CANini data.

Alternative to CANini, also the widespread **Vector-database CANdb** can be used.

UniCAN Manager

The configuration of a recording can be done comfortable with the **Windows programs UniCAN Manager and UniCAN Config**. This features access to communication data which have been previously defined in CANini or CANdb. Therefore common terms (like "RPM") can be used for definition of recording parameters (triggering threshold etc.).

In addition, **common parameters** for recording are defined with UniCAN Manager:

- ✓ **Designation** of recording (for subsequent identification)
- ✓ **User comment** (max. 60 KByte)
- ✓ **CAN-bus transfer rate** (up to 1MBit/sec)
- ✓ **Standard** (11 Bit) or **Extended** (29 Bit) **identifier**
- ✓ **Hold time** after turning off ignition ²⁾ (100 ms up to 60 sec)
- ✓ **Memory organization** (configuration as one-time or ring buffer)

¹⁾ Manufacturer: Vector Informatik

²⁾ Available only if a permanent power supply and a dedicated „PowerControl“-signal (e.g. ignition signal) is used

After recording UniCAN Manager is also used for data transfer to the computer. **Output of the recorded data** is in ASCII format, which can be imported into **MS EXCEL** ³⁾ and other programs for further processing. In addition, the common **file-formats** of known application and recording tools (**CANalyzer**, **CANgraph**, **DIADEM**, **INCA**) are supported.

UniCAN Manager can divide especially large volumes of data into handy packages. The number of single files can be determined by selecting of file length or time frame (day, hour, minute).

Recorder Mode

For **diagnosis and long-term examination** of CAN systems the Recorder Mode is available. This mode is very useful to register **sporadic failures** for subsequent PC analysis. Memory capacity is only limited by the ATA Flash Card. The recorded CAN messages are tagged with a **time stamp** (resolution: 50 µs).

UniCAN Professional records the following data:

- **Messages** (identifier and data content)
- **Fault conditions on the CAN bus**

A **filter function to select identifiers** can be used. It is also possible to record the complete bus traffic.

Recording Conditions for Recorder Mode:

For CAN diagnosis flexible **recording conditions** are available. The following parameters can be utilized in the Recorder Mode:

- **CAN identifier**
- **Data content** (physical value, definition by CANini or CANdb)
- **Fault conditions**
- **Digital input** (external)

For each parameter a selection between **triggering and gate function** is possible. If a triggering threshold is reached the initiated start of the recording remains active for indefinite time.

³⁾ Compatible to Microsoft Office 97 / 2000

If the gate function is selected recording is active as long as the condition of recording is valid. For short-term or "singular" events (appearance of identifier or fault condition) a **hold time** (100 ms up to 60 sec) can be specified to record **subsequent data** (post history).

In any case the recording of **prehistory** data is possible (approx. 40 KByte data each).

Up to **8 conditions of recording** can be combined logically in order to select specific events.

For turn on of ignition ²⁾ a **start delay** (100 ms to 60 sec) can be defined. During this time the recording will be disabled. Therefore irregular conditions on the CAN-bus can be disregarded.

❑ **Special Applications for Recorder Mode:**

For special applications the Recorder Mode offers specific settings for adaptation to the physical CAN-bus:

- **Sample point**
- **Access to bit timing register (BTR)**

For *one* CAN channel also the following functions are available:

- **Recording of remote frames**
- **Triggering on remote frames**
- **Listen only mode** (no acknowledge)

Logger Mode

For **logging of measurement values** the Logger Mode is available. In this mode up to **96 different measurement variables**, that are available on the CAN-bus, can be selected and written onto the ATA Flash Card.

The definition of measurement variables is performed easily and flexible by selection of interesting data elements out of CANini or CANdb, e.g. "RPM", "oil temperature".

In UniCAN Config the measurement variables are supplemented with the following parameters in order to fully describe the measurement:

- **Data source** (CAN-bus 1 or 2)
- **Time base** for measurement (1ms, 2ms, 5ms, 10ms,....., 10s, 30s, 60s)

For each measurement variable a separate time base can be selected. All measurement data are buffered in the input cache of UniCAN Professional, where they stay available until they are overwritten by new data from the CAN-bus or until the data are written to the Memory Card according to the specified time base.

❑ **Logging Conditions for Logger Mode:**

Flexible **logging conditions** are available. The following data items can be used:

- **Data content** (physical value, definition by CANini or CANdb)
- **Digital input** (external)

For each item a selection between **trigger and gate condition** is possible (as in Recorder Mode). Up to **8 logging conditions** can be combined logically.

Log File

For Recorder and Logger Mode the following status information including time stamp are stored into a separate log file:

- **Power supply** (on / off)
- **Ignition state** (on / off)
- **Recording** (active / interrupted)

Service Functions

UniCAN Professional can be connected to a computer running Windows operating system via a RS232 interface. The following functions are available:


- **Set Real-Time Clock** (Service Mode)
- **Online Display** (ASCII Format)

The online display is available during measurement for *control purposes*. For instance a notebook can be used to display the following information by means of the UniCAN Manager:

- **Time**
- **UniCAN system load**
- **CAN-bus load** (Recorder Mode)
- **Measurement data** (Logger Mode)

The time interval for display of measurement data is selectable between 1 s and 10 s.

Specification UniCAN Professional

Item	UniCAN Professional as external box with slot protection cover ¹⁾
Dimensions Weight	109 (W) x 35 (H) x 176 (D) mm approx. 400 g
Power Supply	8 V to 32 V DC via 3-pin low voltage connector
Power Consumption	PowerDown (PowerControl OFF) approx. 2mA at 12V approx. 1300 mW (with ATA Flash Card, no access) approx. 1600 mW (with ATA Flash Card, access)
CAN Interface ²⁾	2 x CAN 2.0B (active): 1 x High-Speed CAN (ISO11898), max. 1MBit/s ³⁾ (500k, 250k, 125k, 83.3k, 62.5k, ...) and / or 1 x Low-Speed CAN (ISO11519), max. 125kBit/s (100k, 83.3k, 62.5k, 50k, ...)
Connector	D-SUB 9-pin male
RS232 Interface	automatic baud rate detection max. 115,200 Baud (115.2k, 57.6k, 38.4k, 19.2k, 9.6kBaud)
Connector	D-SUB 9-pol female
PC Card Slot	one slot for PC Card type II at front
PC Card Types	ATA Flash Card SanDisk (type II), ATA CompactFlash Card SanDisk (with adapter)
LED Indicators	4 LED's for indication of operation modes: POWER (green) / BUSY (red) / STATUS (green) / ERROR (red)
Environment	- 40°C to + 85°C (operation and storage) humidity max. 90% (non-condensing)
Conformity	

¹⁾ please ask: other mechanical versions, e.g. 3 1/2" 19" or PCB only

²⁾ please ask: support for other bit rates

³⁾ Reference to performance is available from our technical sales

Shipping Contents:

- **UniCAN Professional**
in external box with Installation Guide
- **Power Supply Cable**
(end open)
- **RS-232 Cable**
to connect the device to a PC
- **Disk (3 1/2") with UniCAN Tools:**
UniCAN Manager and UniCAN Config
for WIN 95/98/Me, WIN NT 4.0, WIN 2000/XP
and detailed documentation

Additional Products:

- **UniCAN GSM feature activation**
Activation for optional remote access and
–configuration with an external **GSM modem**.
- **AD-Scan SMB/CAN**
Measurement device with 14 differential inputs:
-3.5 V to +16 V, with CAN interface
- **Thermo-Scan SMB/CAN**
Measurement device with 14 NiCr-Ni inputs:
-100 °C to +1372 °C, with CAN interface