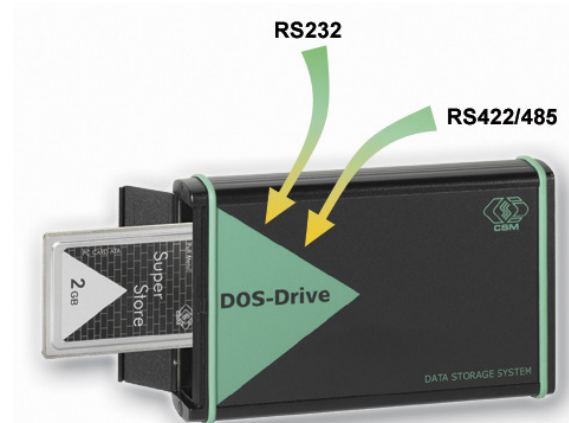


DOS-Drive

- ▶ PC Card Reader-Writer for embedded systems and microcontrollers
- ▶ Communication via asynchronous serial interface (RS232, RS422/485)
- ▶ Robust ATA Flash Card as removable storage medium
- ▶ Easy data exchange with notebooks through DOS FAT file system (MS-DOS 6.x)
- ▶ Functions to create, read, write and format files and directories
- ▶ Extended temperature range:
-40 °C to +85 °C



Fields of Applications

Memory Cards are used as universal, flexible and reliable media to exchange data between devices and PCs.

Often there is the need to integrate a Memory Card interface into an existing device. For this purpose CSM offers the **DOS-Drive**, a universal and mature solution for *embedded systems*. This product is based on our **long standing experience** in secure Memory Card applications.

CSM DOS-Drive is used in these fields:

- ▷ **Machine and Plant Construction**
Machine setup data,
process instructions and control
- ▷ **Traffic Engineering**
Trip recorders, passenger counting,
traffic light control
- ▷ **Medical Technology**
Biosignal recorders, reading of
therapy data for dialysis devices
- ▷ **Measurement Technology**
Recording of measurement data,
e.g. in weighing systems

Universal Data Format for PC Cards

The Microsoft DOS FAT File System is widely-used and supported by all computers running Windows.

If an *embedded system* needs to exchange data with a PC, it must be able to manage the data on the Memory Card in DOS format. The design of the required hard- and software is normally associated with high engineering costs.

With **CSM DOS-Drive** a **professional and perfect standard product** can be used directly. Your final system meets the expected functionality without the expense and risk of an individual system development.

Robust Storage Medium

As storage media **ATA Flash Cards** are supported which are perfect for industrial use due to their reliability and robustness.

For use with **DOS-Drive** we recommend **CSM SuperStore ATA Flash Cards** which can be chosen in capacities between 32 MB and 2 GB.

DOS-Drive Features

CSM DOS-Drive is outstanding in conception, functionality and performance:

- ▷ **File System full compatible with MS-DOS 6.x**
support of 12-bit and 16-bit FAT
- ▷ **Extensive File Functions:**
create, open, close,
read, write, position,
rename, delete,
read/define date and attribute
- ▷ **Support of Subdirectories:**
change, create, delete, show
- ▷ **Formatting of PC Cards**
in MS-DOS compatible format
- ▷ **Sector Access for Special Applications**
format-independent access to
all sectors of the PC Card (read and write)
- ▷ **Request of Status Information**
PC Card inserted/changed,
information about PC Card (type, size, format)
- ▷ **Full Functionality**
user defined file names, up to 16 files opened at
the same time, max. number of files in the root
directory only limited by format
- ▷ **High effective Data Transfer Rate**
optimized access by an internal cache
for data and FAT

Universal Serial Interface

The requirements for the host system are minimal. Only an **asynchronous serial interface** without handshake lines is needed.

CSM DOS-Drive provides, depending on the ordered version, various line transceiver types (**RS232** or **RS422/485**).

Especially RS422/485 is perfect for long distance applications because of its **high speed and interference resistance**. A large separation distance between host system and **CSM DOS-Drive** is no problem.

CSM DOS-Drive detects **automatically** the **baud rate** used by the host system. The maximum baud rate is adapted to the type of line transceiver:

max. 115,200 Baud at RS232

max. 500,000 Baud at RS422/485

CSM DOS-Drive can be used either using **full duplex** (RS232 or RS422) or **half duplex** (RS485) data transmission.

Professional communication protocol

For communication between host-system and **CSM DOS-Drive** commands and data are transferred via an asynchronous serial line.

For this a **simple and safe protocol** is available to handle the complete functionality in an easy way:

- ▷ **Efficient and optimized communication:**
command/answer-protocol,
checksum secured telegrams,
high data transfer rate,
automatic baud rate detection,
communication at full duplex and half duplex

Hence, **CSM DOS-Drive** is widely independent of the individual architecture of the host-system and requires only **minimal resources**.

Support for Design-In

Usually **CSM DOS-Drive** will be integrated into an own system as an OEM component. The integration into a target system is a one-time process. Therefore, the **documentation and application samples** are offered as a separate product which has to be purchased only once:

- ▷ **DOS-Drive SDK (Software Development Kit):**
complete device description,
detailed documentation of the
serial communication protocol,
test and demo application

For testing and as an example, a **32 Bit Windows application**¹⁾ is delivered which supports the standard COM interfaces of PCs. The available functions correspond to those of a DOS command interpreter (COMMAND.COM):

FORMAT, DIR, COPY, TYPE, DEL, REN, CD, MD, RD and others.

For an engineering test of **DOS-Drive** models which are equipped with RS422/RS485 line transceivers or non PC-compatible baud rates (e.g. 500,000 baud), the **DOS-Drive SDK** can be ordered with a suitable **CSM SIO-Card**²⁾.

Additional support on request: Consulting and training after an arrangement, please ask for custom specific versions.

¹⁾ **System requirements:**

Win Vista, XP, 2000, NT 4.0 oder 9x/Me

²⁾ **Refer to datasheet of CSM SIO-Card**



Specification DOS-Drive

| Item | DOS-Drive with front cover | DOS-Drive 3 1/2" | | |
|---|--|---|---|---|
| Case | External box ¹⁾ | 3 1/2"-slot | | |
| Dimensions (W x H x D) | 109 x 35 x 176 mm | 101.5 x 25.5 x 166 mm | | |
| Weight | approx. 430g | approx. 270g | | |
| Power Supply | Device types: 5 V DC ²⁾ or 8-32 V DC via 2-pole low voltage connector | 5 V DC via 3 1/2" floppy connector | | |
| Power Consumption ³⁾ | <table border="1"> <tr> <td>Device type 5 V DC: approx. 300 mW (without PC Card) approx. 500 to 750 mW (with PC Card) ³⁾</td> <td>Device type 8-32 V DC: approx. 500 mW (without PC Card) approx. 800 to 1200 mW (with PC Card) ³⁾</td> </tr> </table> | Device type 5 V DC: approx. 300 mW (without PC Card) approx. 500 to 750 mW (with PC Card) ³⁾ | Device type 8-32 V DC: approx. 500 mW (without PC Card) approx. 800 to 1200 mW (with PC Card) ³⁾ | approx. 300 mW (without PC Card) approx. 500 mW to 750 mW (with PC Card) ³⁾ |
| Device type 5 V DC: approx. 300 mW (without PC Card) approx. 500 to 750 mW (with PC Card) ³⁾ | Device type 8-32 V DC: approx. 500 mW (without PC Card) approx. 800 to 1200 mW (with PC Card) ³⁾ | | | |
| Interface Lines | asynchronous, serial interface (only Rx/D, Tx/D) eight data bits, one stop bit, no parity automatic baud rate detection | | | |
| Connector | D-SUB 9-pin female | | | |
| RS232 or RS422/RS485 ⁴⁾ | max. 115,200 Baud (115.2 k, 57.6 k, 38.4 k, 19.2 k, 9.6 k ... Baud) max. 500,000 Baud (500 k, 250 k, 125 k, 100 k, 62.5 k, ... Baud) ⁵⁾ | | | |
| PC Card Slot | one slot for PC Card type II at front | | | |
| PC Card Types | ATA Flash Card Type II, CompactFlash Card with adapter | | | |
| LED Indicators | operation: POWER (green LED), access: BUSY (red LED) | | | |
| Environment | -40 °C to +85 °C (operation and storage) humidity max. 90 % (non-condensing) | | | |
| Conformity | CE | | | |

¹⁾ please ask: DOS-Drive as PCB-version

²⁾ please ask: power supply via wall power supply

³⁾ The power consumption depends significantly on the used ATA Flash Card. In case of using CSM SuperStore Flash Cards you get typ. 550 mW (5 V) or 880 mW (8-32 V).

⁴⁾ Availability dependent on model

Shipping Contents:

- **DOS-Drive** device with installation hints
- **Power Supply Cable** (USB, MDIN-PS2) for device type 5 V DC
- **Power Supply Cable** (end open) for device type 8-32 V DC
- **Power Adapter** 5 1/4" to 3 1/2" (for DOS-Drive 3 1/2")

Additional Products:

- **DOS-Drive SDK** (CD with software & documentation)
- **DOS-Drive SDK with SIO-Card RS422/485-500kBd** (CD with software & documentation plus SIO-Card)
- **OmniDrive USB2 Professional** universal PC Card Reader for USB 2.0 interface for data exchange with PCs
- **SuperStore Industrial Memory Cards**

CSM GmbH, Raiffeisenstr. 34, 70794 Filderstadt, Germany

Phone: +49 711 77964-20 Fax: +49 711 77964-40

E-mail: info@csm-products.com, www.csm-products.com

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