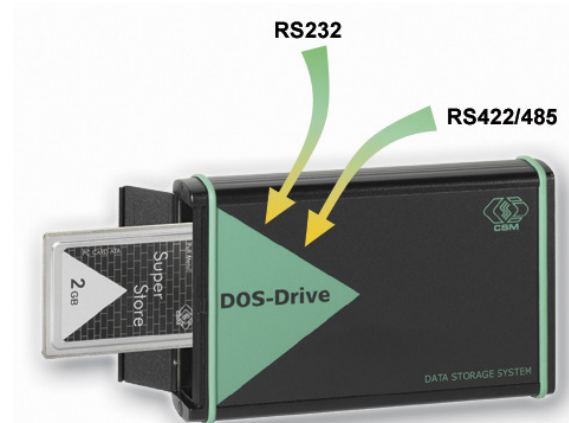


DOS-Drive

- ▶ 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 128 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.

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

¹⁾ **System requirements:**
Windows 7, Vista, XP, 2000, NT 4.0 or 9x/Me



Specification DOS-Drive

Item	DOS-Drive with front cover	DOS-Drive 3.5"		
Case	External box ¹⁾	3.5"-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 3.5" 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⁾
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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)			
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** 5.25" to 3.5" (for DOS-Drive 3.5")

Additional Products:

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

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