

General Features

The D016M is a multipurpose PCIe MVB interface on a 40 x 85 mm size footprint (PC/30+). All features of the MVB architecture are available: Process Data, Message Data, Bus Administrator and physical layer EMD or ESD+.

The D016M is available in two configurations:

- MDFULL: passive MVB interface with a duagon MVB controller
- SERVER: active MVB interface including the Message Data Real Time Protocol stack MD RTP. This approach minimizes the CPU requirements of the host system, because the major part of the communication software is running on the duagon interface

A handy starter-kit is available for evaluation and host-application-software development.

The D016M fully complies with the TCN standard IEC 61375. It is designed for the harsh traction environment and conforms to the EN 50121, EN 50155 and EN 61373 standards, e.g. by:

- -40 to +85°C operating temperature
- Coating against humidity
- Enhanced EMI and vibration robustness

Besides the D016M, the D016 series covers interface cards for the following vehicle bus systems:

- D016M: PCIe MVB Interface (this document)
- D016E: PCIe Ethernet Interface
- D016C: PCIe CAN Interface

All interface products of the D016 series have the same PC/30+ footprint. That way, modules of this product family can easily be exchanged without adaptation of the customer's host PCB.

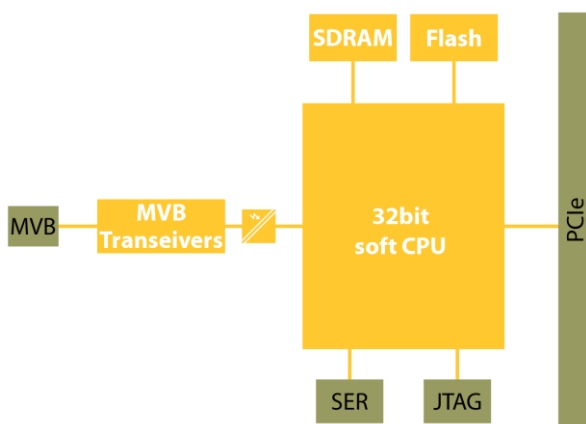
Key Benefits

- Optionally, the D016M can act as a full featured MVB Bus administrator
- ANSI C source files allows an easy porting to any host / operating system combination
- The module is compatible with EMD and ESD+ physical MVB layers
- The D016M conforms with the EN50121, EN50155, EN 61373 and IEC61375 standards, and is designed for the harsh traction environment
- Modules of this product family can easily be exchanged without adaptation of the customer's host PCB

Application Examples

- Generic MVB interface featuring a passive or active MVB interface and different physical MVB layers
- Integration of several D016 interfaces on a host system, for example to connect a host system to Ethernet, MVB or CAN

D016M Hardware Architecture



D203 Evaluation Kit

This evaluation kit allows the development of the host software using either the serial or the parallel interface. The delivered adapter card enables the mounting of any interface card of the

D016 series. A reference schematic and software examples help to speed up the integration time.

Technical Data

| | |
|------------------------|---|
| CPU base System | <ul style="list-style-type: none"> – 32-bit soft-CPU – 6 Mbyte Flash Memory – 100 kByte SDRAM Memory |
| MVB Interface | <ul style="list-style-type: none"> – Supports two redundant MVB lines A and B – MVB lines A and B are galvanically insulated from the logic/IO and from each other – MVB physical layers ESD+ or EMD – The software structure depends on the chosen configuration passive or active interface |
| MVB Software | <ul style="list-style-type: none"> – Available in MDFULL or SERVER configuration – Supports 8-Bit Parallel Host Interface UART – Passive and active MVB interface available – duagon UART emulation (2nd generation) |
| Host Interface | <ul style="list-style-type: none"> – PCI Express based PC/30+ host interface – LEDs for visual status information (power on, running, communicating, failure, ...) – No service needed |

| | |
|-----------------------------|--|
| Diagnostic / Service | <ul style="list-style-type: none"> – Device status information/identification available through host interface – JTAG and serial line available |
| Supply Voltage | <ul style="list-style-type: none"> – Single power supply – 3.3V |
| Operating Conditions | <ul style="list-style-type: none"> – Ambient temperature: –40 to +85°C (EN 50155) – Relative humidity: 75%, max 95% for 30 days per year (conformal coating) according to EN 60068 – Shock and vibration: According to IEC 61373 category 1, class B – EMI: According to EN 50121 and EN 50155 |
| Dimensions / Weight | <ul style="list-style-type: none"> – 40 x 85 x 34.2mm (absolute maximum height) – approx. 40g (without front bezel) |
| Environment | <ul style="list-style-type: none"> – Fully compliant with RoHS and REACH |

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Order Code and Hardware Options

ProductType: **D016M** - [] - []

EXAMPLE: D016M-LFT-P3BBU

| MVB Options | Connector and other Options |
|---------------------------|--|
| MVB Function MDFULL | Form Factor PC/30+ with front bezel |
| MVB Function SERVER | Form Factor PC/30+ without front bezel |
| With Bus Administrator | MVB Connector Single SUB-D |
| Without Bus Administrator | MVB Connector Double SUB-D |
| MVB Type EMD | SUB-D with UNC4/40 screw locks |
| MVB Type ESD+ | SUB-D without screw locks |

Related Documents

- Data Sheet D016M** D016M_DS.pdf
- Short Data Sheet D016E** D016E_SDS.pdf
- Short Data Sheet D016C** D016C_SDS.pdf

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