General Features

The D134E interface platform is designed for maximum flexibility and provides different communication stacks commonly used in railway applications.

A client-server based software architecture approach enables the interface to be run on host systems, which do not provide stock ethernet capability.

Real time requirements are handled on the D134E system. The driver kit, which is running on the host system handles communication to the D134E board and provides the API to communicate on Ethernet.

Different real-time protocol stacks are available to fulfil the requirements for ethernet applications in railways.

The D134E is a multi-purpose Ethernet interface platform. It is available with different communication stacks, to fulfil the traction requirements.

To reduce the integration complexity, the communication is done through the well-known duagon Client-Server architecture.

The internal logic is prepared for the "Ethernet on traction vehicles" standard IEC61375-3-4.

The D134E is designed for harsh traction environment: -40 °C to 85°C

Ambient temperature range. Tested against

EN 50155/ EN 50121

IREE 802.3/ EN 61373

IEC 61375 (2007)

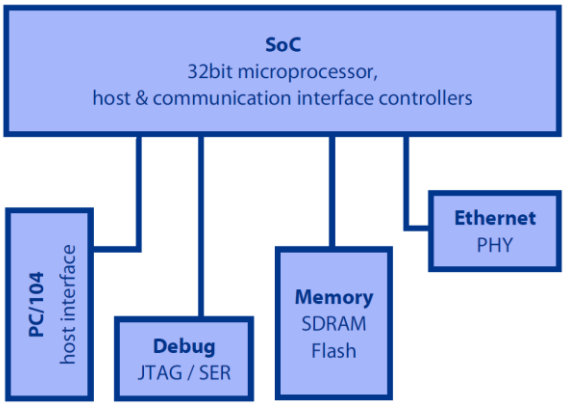
Key Benefits

- Integrated train manufacturer specific webservices
- Hardware prioritisation within the duagon's own Ethernet controller
- Proprietary high-performance UDP Stack (optimised for cyclic process data telegrams)
- Encapsulation of real-time Ethernet protocol stacks
- Reducing CPU power on the Host System
- Fully compliant to EN50128, EN50129, IEEE 802.3, EN 50155, EN 50121, IEC 61373 and IEC 61375

Application Examples

- Generic Ethernet interface for various real-time protocols

D134E Hardware Architecture



Life Cycle Cost

Total cost of ownership was an important aspect when creating the installation, maintenance and service concept. The integrated switch (optional) reduces the number of needed additional switches to build redundant topologies. Furthermore, to avoid service expenses, the interface card has strictly been designed without the usage of electrolytic capacitors.

Technical Data

CPU base System	– 32bit soft-CPU (FPGA) – 32 MB Flash Memory – 32 MB SDRAM Memory
Ethernet Interface 1+2	– Physical layers according IEEE 802.3 – RJ-45 according IEEE 802.3 or – M12 (D-Coded) according IEC 61076) – up to two connections
Ethernet Protocols	– Standard TCP or UDP Sockets – IPTCom – CIP (Scanner light and Adapter functionality) – TRDP – Other protocols available on request
Host-Interface	– duagon UART emulation (2nd generation) – Interface according to PC/104 specification
Supply Voltage	– Single power supply – 5V
Diagnostic/ Service	– Device status information/identification available through host interface – Firmware update via Ethernet – JTAG and serial line available
Power consumption	– Max. 2W
Operation conditions	– Temperature: -40 to +85 °C (EN 50155 class TX) – Relative humidity: 75%, max 95% for 30 days per year (conformal coating) EN 60068 – Shock and vibration: According to IEC 61373 – Category 1, class B – EMI: According to EN 50121 and EN 50155
Dimensions/ Weight	– PC/104: 95 x 90 mm – Mass: approx.100g
Environment	– Fully compliant to RoHS and REACH – 100% 48h cyclic climatic testing

Order Code and HW Options

Product Type: **D134E** - [ ] - [ ] - [ ] [ ] [ ]

EXAMPLE:
D134E-B-N-P4M2V

Ethernet Interface		Web Maintenance		Form Factor		Ethernet-Connector Type		Connector And other Options	
TCP/ UDP Sockets	I	default	N	PC/104	P4	1 x RJ45	R	defaults	_ _ _
IPTCom-B Adapter	B	Alstom Web-maintenance	AWM			2 x RJ45	RR	With 64-pin and 40-pin PC/104	2 _ _
EtherNet/IP	CIP					1 x M12	M	PC/104 no-stackthrough pins	_ X _
Scanner	C					2 x M12	MM	Light Guide for "ACT/LINK"	_ _ V
TRDP	CSL								
	TR								

Related Documents

Data Sheet D134E	d134E_ds.pdf
Integration Guide	integ_pc104.pdf
Configuration Guide	config_ug.pdf

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