



- **NAS for Autonomous Vehicles**
- **Shock & Vibe and E-Mark Certified**
- **16TB NVMe Storage**
- **Dual 40/56 Gigabit Ethernet**
- **In-vehicle Installation**
- **Liquid Cooled**
- **Professional Services**

## Features

**High-performance Networking Storage** - The system provides up to 16TB storage @4.4GB/s writing speed and multiple 40/56 GbE interfaces

**Automotive Certified** - E-Mark and Shock & Vibe certifications for reliable operation in autonomous driving and other rugged applications

**In-vehicle Installation** - An optional Docking Station allows to easily pull the system in and out from the vehicle and bring it into the data center

**Liquid Cooled** - The extremely compact, fanless and ventless unit dissipates up to 1kW with an integrated direct exchange technology that interfaces the vehicle liquid cooling system

**Professional Services** - The modular design allows further customization through Eurotech Professional Services, including the integration of user selected accelerators, storage and networking modules

## Description

The DynaCOR 40-34 is a compact, liquid-cooled, rugged HPEC networking storage system, certified for automotive applications. It embeds an Intel Xeon E3 v3 processor with 32GB soldered-down ECC RAM, and multiple high-performance NVMe SSD Cards, Network Interface Controllers (NIC) and GPUs.

The DynaCOR 40-34 is designed to withstand shocks and vibrations, and it is E-Mark certified for in-vehicle installations.

The internal architecture of the DynaCOR 40-34 features one CPU card and provides five internal bays for GPUs, NVMe and networking modules, connected with a 96 PCIe lanes switch.

Off-the-shelf configurations include the following PCIe expansion cards: two NVMe SSD Cards providing up to 16TB of storage, one Network Interface Controller (NIC) card that enables two 40/56 Gigabit Ethernet interfaces, and one NVIDIA GeForce GPU. Eurotech Professional Services allow for further personalization, including validation and integration of user-selected expansion modules.

The DynaCOR 40-34 supports loads of up to 1kW thanks to an innovative technology that interfaces with the vehicle liquid cooling system. The coolant circulates inside cold plates that are tightly coupled with the expansion boards, providing efficient heating dissipation.

An optional Docking Station makes it quick and easy to swap or transfer the unit to the data center, whenever immediate dataset availability is required.

## Expansion Modules Specifications

|                   |                |  |
|-------------------|----------------|--|
| <b>CPU Module</b> | CPU            | Xeon E3-1281v3 - 3.70GHz (4.1GHz Turbo Boost), 4 Cores         |
|                   | RAM            | 32GB DDR3-ECC High Reliability Soldered-down                   |
|                   | Ethernet       | 2x 10/100/1000Mbps - RJ45 (Shared with Out-of-band Management) |
|                   | USB            | 3x USB 2.0 (100mA, Type A), 1x USB 2.0 (500mA, Type A)         |
|                   | Serial         | 1x Configurable Serial (RS-232 Default, DB9)                   |
|                   | Consumption    | 110W Max   |
| <b>NVMe</b>       | Type           | High Performance NVMe (8 Lanes PCIe Gen 3, High Endurance)     |
|                   | Capacity       | 7.68TB Max   |
|                   | Performance    | Max 6100MB/s Sequential Read, Max 2200MB/s Sequential Write    |
|                   | Consumption    | 25W Typ. (9W Idle)   |
| <b>NIC</b>        | I/O Interfaces | Dual 40/56 GbE QSFP28 (QSFP+ Compatible)                       |
|                   | Consumption    | 25W Max  |
| <b>GPU</b>        | Model          | NVIDIA GeForce GTX 1050 Ti                                     |
|                   | Clock          | 1290MHz (1392MHz Boost)  |
|                   | RAM            | 4GB GDDR4 ECC, 7Gb/s Memory Speed                              |
|                   | Max Resolution | 7680x4320@60Hz   |
|                   | I/O Interfaces | 1x DL-DVI, 1x DisplayPort 1.4                                  |
|                   | Consumption    | 75W Typ. (110W Peak)   |

## Ordering code: DYCOR-40-34-XX

|                   | XX                         | - 01                       | - 02 |
|-------------------|----------------------------|----------------------------|------|
| <b>CPU Module</b> | Intel Xeon E3-1281v3       |                            | 1x   |
| <b>NVMe</b>       | NVMe (7.68TB)              | 1x                         | 2x   |
| <b>NIC</b>        | Dual 40/56GbE              |                            | 1x   |
| <b>GPU</b>        | NVIDIA GeForce GTX 1050 Ti |                            | 1x   |
| <b>POWER</b>      | Input                      | 9-18VDC (12VDC Nominal)    |      |
|                   | Consumption                | Up to 350W TBC (450W Peak) |      |

**Other expansions modules (GPU, NVMe, FPGA, etc.) are available through Eurotech Professional Service**

## Superset Specifications

|                         |                 |   |
|-------------------------|-----------------|---|
| <b>Expansion Module</b> | Format          | 5x Expansion Bays compatible with PCIe Gen 3 Expansion Cards                          |
| <b>Midplane</b>         | PCIe Switch     | PCIe Switch Providing 96 PCIe Gen 3 Lanes   |
| <b>Management</b>       | Supervisor      | Independent Controller Board for System Level Environment Management                  |
|                         | BMC             | Baseboard Management Controller for Out-of-band Management (IPMI Tool Support)        |
| <b>Storage</b>          | SATA            | 1x 256GB High Reliability SATA SSD  |
| <b>I/O Interfaces</b>   | Display         | 1x Display OLED (Integrated)  |
| <b>Other</b>            | LEDs            | 3x LED Indicators   |
| <b>Power</b>            | Input           | Options: 9-18VDC (12VDC Nominal) – 36-58VDC (48VDC Nominal)                           |
| <b>Environment</b>      | Operating Temp. | 0 to +50°C (Factory Option: Wider Ranges)   |
|                         | Storage Temp.   | - 20 to +70°C (Without Liquid Coolant, Depending on Configuration)                    |
| <b>Mechanical</b>       | Dimensions      | 157 x 162 x 455 mm (H x W x D)  |
|                         | Weight          | ~ 11Kg  |
|                         | Cooling         | Direct Hot Water Cooling (Car Cooling System or Independent Cooling Unit can be used) |
|                         | Installation    | Docking Station   |

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