DynaCOR 50-35

Automotive HPEC Server - Dual 14-core Intel Xeon, Liquid Cooled

- **In-vehicle Deep Learning**
- **Shock & Vibe and E-Mark Certified**
- **Dual 14-core Intel Xeon**
- **NVIDIA GeForce® GTX GPUs**
- **Dual 40/56 Gigabit Ethernet**
- **Liquid Cooled**
- **Professional Services**

Features

In-vehicle Deep Learning Enabler - In-vehicle supercomputing platform that allows both inference and training with TensorFlow, Caffe and other DL frameworks
Automotive Certified - E-Mark and Shock & Vibe certifications for reliable operation in Autonomous Driving and other rugged applications
In-vehicle HPEC Platform - The DynaCOR 50-35 is designed to substain massive workloads thanks to dual 14-cores Intel Xeon CPUs and multiple high-performance accelerators, networking cards and storage modules
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 50-35 is a compact, liquid-cooled, HPEC supercomputing platform, certified for automotive applications. The system features two Intel Xeon E5-2600 CPUs with up to 14 cores and 2.60GHz clock speed. It also mounts 64GB soldered-down ECC RAM, and multiple high-performance GPUs, Network Interface Controllers (NIC) and NVMe SSD cards.

The DynaCOR 50-35 is designed to withstand shocks and vibrations, and it is E-Mark certified for in-vehicle installations.

The system supports deep learning and high-performance numerical computation algorithms, such as TensorFlow and Caffe, providing an ideal platform for Autonomous Driving and Artificial Intelligence (AI) applications.

The internal architecture of the DynaCOR 50-35 features a dual 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 NVIDIA GTX 1070 Graphic Processing Unit, and several Network Interface Controller (NIC) cards that enable multiple 1/10/40/56 Gigabit Ethernet interfaces. Eurotech Professional Services allow for further personalization, including validation and integration of user-selected expansion modules.

The DynaCOR 50-35 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.

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Expansion Modules Specifications

CPU Module	CPU	Dual Xeon E5-2690v4 2.60GHz (3.50GHz), 14 Cores – Dual Xeon E5-2640v4 2.40GHz (3.40GHz), 10 Cores
	RAM	64GB DDR4-ECC High Reliability Soldered-down
	Ethernet	2x 10/100/1000Mbps (RJ45), 4x 10/100/1000Mbps (RJ45)
	USB	3x USB 2.0 (100mA, Type A), 1x USB 2.0 (500mA, Type A)
	Serial	1x Configurable Serial (RS-232 Default, DB9)
	Consumption	270W (Dual CPU TDP)
GPU	Model	NVIDIA GeForce GTX 1070 Ti
	RAM	8GB GDDR5-ECC
	I/O Interfaces	1x HDMI, 3x DisplayPort 1.4 – 7680x4320@60Hz Max Resolution
	Consumption	180W Typ.
NVMe	Type	High Performance NVMe (8 Lanes PCIe Gen 3, High Endurance)
	Capacity	7.68TB (Max 6100MB/s Sequential Read, Max 2200MB/s Sequential Write)
	Consumption	25W Typ. (9W Idle)
40/56 GbE NIC	I/O Interfaces	Dual 40/56 GbE QSFP28 (QSFP+ Compatible)
	Consumption	25W Max
GbE NIC	I/O Interfaces	4x 10/100/1000Mbps - RJ45
	Consumption	5W Typ.

Ordering code: DYCOR-50-35-XX

XX		- 01	- 02	- 03	- 04	- 05	- 06
CPU Module	Model	Dual Intel Xeon E5-2640			Dual Intel Xeon E5-2690		
GPU	NVIDIA GeForce GTX 1070 Ti	1x	2x	1x	1x	2x	1x
NIC	Dual 40/56 GbE	1x	1x	1x	1x	1x	1x
	GbE	1x	1x	1x	1x	1x	1x
NVMe	High Performance NVMe	-	-	1x	-	-	1x

Superset Specifications

EXP MODULES	Format	5x Expansion Bays compatible with PCIe Gen 3 Expansion Cards – 1x PCIe Expansion slot (directly connected to CPU)
MIDPLANE	PCIe Switch	PCIe Switch Providing 96 PCIe Gen 3 Lanes
MANAGEMENT	Supervisor	Independent Controller Board for System Level Environment Management
	BMC	Baseboard Management Controller for Out-of-band Management (IPMI Tool Support)
STORAGE	SATA	1x 512GB Slim SATA SSD
I/O INTERFACES	Display	1x Display OLED (Integrated)
OTHER	LEDs	6x LED Indicators
POWER	Input	36-58VDC (48VDC Nominal)
	Consumption	1kW Max
ENVIRONMENT	Operating Temp	0 to +50°C (Factory Option: Wider Ranges)
	Storage Temp	- 20 to +70°C (Without Liquid Coolant, Depending on Configuration)
MECHANICAL	Dimensions	210 x 210 x 650 mm (H x W x D)
	Weight	< 20kg
	Cooling	Direct Hot Water Cooling (Car Cooling System or Independent Cooling Unit can be used)