DynaCOR 50-35

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

- **Configurable HPEC Cluster**
- **Highly Customizable**
- **Dual Intel® Xeon® E5 v4**
- **Hot Liquid Cooling**
- **In-vehicle Installation**
- **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 cluster that can be customized with several PCIe expansion cards to fulfill specific use-cases. The system is designed for automotive and lightly rugged applications, and it can feature two Intel Xeon E5-2600 CPUs with up to 14 cores and 2.60GHz clock speed.

The DynaCOR 50-35 mounts 64GB of soldered-down RAM and it is highly configurable thanks to up to five expansion bays for additional GPUs, NVMe and networking modules. All these expansion modules can be fitted on an active midplane PCIe switch that provides up to 96 PCIe lanes (Gen. 3).

Pre-validated PCIe expansion cards include: NVIDIA GTX 1050/1070 Graphic Processing Unit, NVMe SSD Cards capable to provide multiple terabytes of storage, Network Interface Controller (NIC) cards that can enable multiple 1/10/40/56 Gigabit Ethernet interfaces. Other expansion modules can be fitted and supported by exploiting Eurotech Professional Services.

The DynaCOR 50-35 dissipates its power by means of an innovative hot liquid heating dissipation mechanism, able to manage several hundred Watts of system energy consumption. The liquid circulates inside the chassis inside metallic plates that are finely coupled with the expansion boards, providing efficient heating dissipation. The liquid can be delivered from the coolant distribution system of the vehicle through two quick-disconnect receptacles placed on the rear side of the system.

Professional Services are available for the DynaCOR 50-35, that range from design personalization and inclusion of new expansion modules, additional certifications, till complete system redesign and production.

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)