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4,654,520 8,078,511
8,901,705 4,346,501
6,805,210 6,688,570



CPT3300

**RUGGED IOT EDGE COMPUTER
WITH INTEL® CORE™ i7-9700TE
PROCESSOR**



POWER AUTOMATION COMPUTER

- Intel® Core™ i7-9700TE Processor (up to 3.8 GHz, 8 cores)
- Nvidia GTX1660 Graphic Card support (120W, 6GB RAM 1408 CUDA)
- 32GB DDR4 RAM
- 1x 1TB SSD, 1x 64GB SSD(MLC)
- Multi Display : HDMI/DVI-I/DP
- 6 x LAN (4 x PoE RJ45 or M12),
- 6 x COM, 8 x USB
- Wide Range 9V~48V DC-in



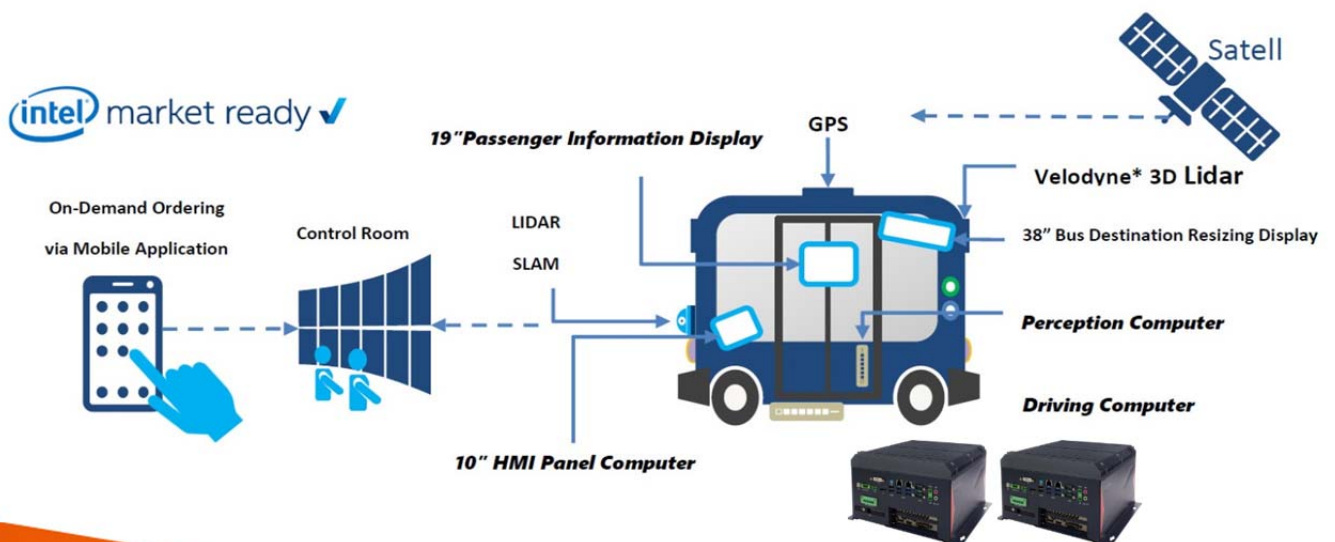
Introduction

From ADAS to full Level 5 autonomy, with a special focus on artificial intelligence, machine learning, sensors, the computing unit handles the main control for the self-driving vehicles, such as converting throttle input to torque requests, safety systems monitoring, control loops, and power limiting. Therefore, Autonomous Vehicles (AV) could contribute to making future mobility more efficient, safer and cleaner.



How Autonomous Vehicle Works

Sensors are key components to make a vehicle driverless. Camera, radar, ultrasonic and LiDAR enable an autonomous vehicle to visualize its surroundings and detect objects. Cars today are fitted with a growing number of environmental sensors that perform a multitude of tasks. The control system integrated sensors for AV encompasses three parts: perception, decision and execution.



01. PERCEPTION LAYER

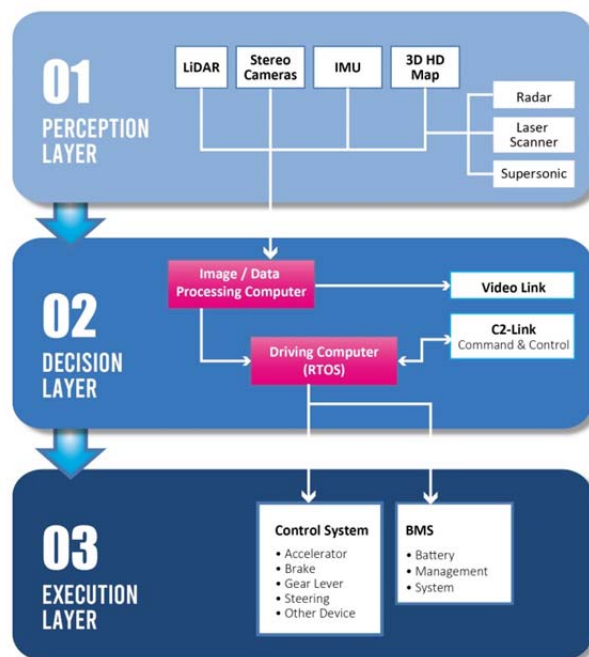
Perception enables sensors to not only detect objects, but also acquire and eventually classify and track objects surround.

02. DECISION LAYER

Decision-taking is one of the most challenging tasks that AVs must perform. It encompasses prediction, path planning, and obstacle avoidance. All of them performed on the basis of previous perceptions.

03. EXECUTION LAYER

Execution layer consists of interconnection between accelerator, brakes, gearbox and so forth. Driven by Real-Time Operating System (RTOS), all these devices can carry out commands issued by Driving Computer.



Required High Performance Computing Power

7StarLake GPGPU Series

An automated-driving control unit is the core controller of autonomous vehicles. 7Starlake has designed high performance GPGPU computer to EASYMILE to achieve the most advanced driverless shuttle – EZ10. EZ10 has been launched in 2015 and operated over 26 countries and up to 200 sites, including Asia, Middle East, North America and Europe. EZ10 has no steering wheel, gas pedal or brake pedal, being 100% driverless. Relative to normal cars, hardware accelerators, such as GPUs, CPU and FPGAs are extremely important to autonomous vehicles for handling computation-intensive tasks.



Specifications

SYSTEM

CPU	Intel® Core™ i7-9700 (12M Cache up to 4.7GHz) 65W Intel® Core™ i7-9700TE (12M Cache up to 3.8GHz) 35W Intel® Core™ i7-8700 (12M Cache up to 4.6GHz) 65W Intel® Core™ i7-8700T (12M Cache up to 4.0GHz) 35W
Memory type	32GB DDR4 DRAM
Chipset	Intel® Q370/C246 Platform Controller Hub

DISPLAY

Graphics Card	NVIDIA GTX1660 supported
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STORAGE

HDD/SSD	2 x 2.5" SSD
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ETHERNET

Ethernet	1x Intel® i210IT Gigabit Ethernet 1x Intel® i218LM Gigabit Ethernet Optional : 4 x PoE RJ45 (Intel i210-IT) Port 4 x PoE M12 (Intel i210-IT) Port
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REAR I/O

Serial	4 x DB9 connector (RS232/422/485)
DI/DO	8-bit Isolated Digital I/O (4 x DI, 4 x DO)
Ethernet	4 x PoE RJ45 or M12 (Optional)
HDMI	1 x 19Pin HDMI1.4 connector (Female), resolution up to 3840x2160@30Hz
USB	2 x USB3.0
Storage	2 x 2.5" SSD

FRONT I/O

Expansion	1 x PCIe16
Audio	1 x Mic-in, 1 x Line-out
Terminal Block	1 x 2Pin Terminal Block Remote Power ON/OFF 1 x 2Pin Terminal Block Remote Reset 1 x 4Pin Terminal Block External FAN Connector 1 x 3Pin Terminal Block Power Input
Serial	2 x DB9 connector (RS232/422/485)
Ethernet	2 x RJ45 Gigabit Ethernet Interfaces (10/100/1000Mbps)
USB	4 x USB3.0, 2 x USB2.0

DisplayPort	1 x 20Pin DisplayPort connector (Female), resolution up to 4096x2160@60Hz
DVI-I	1 x 20Pin DVI-I connector (Female), resolution up to 2560x1600@60Hz
POWER REQUIREMENT	
Power Input	DC-In 9~48V
APPLICATIONS, OPERATING SYSTEM	
Operating System	Windows 10 64Bit Ubuntu14.04, Fedora 20/23, RedHat Linux EL 7.1/7.2
PHYSICAL	
Dimension (W x D x H)	250x130x264.2mm (WxHxD)
Weight	6.75kg (14.88 lbs)
Chassis	SECC + Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide (Color Iron gray and Black)
Cooling	Natural Passive Convection/Conduction. No Moving Parts.
ENVIRONMENTAL	
Reliability	No Moving Parts; Passive Cooling. Designed & Manufactured using ISO 9001/2000 Certified Quality Program.
Operating Temperature	0 to 50°C, optional: -20 to 60°C
Storage Temperature	-40 to +85°C

Ordering Information

CPT330B

Rugged IOT Edge Computer with Intel® 9th Gen. Core i7 CPU, PCIe16 Expansion, 8 x USB, 2 x COM, 2 x LAN, 2 x 2.5" SSD, 9V to 48V DC-in, Operating Temp. 0 to +50°C

CPT330B-ET

Rugged IOT Edge Computer with Intel® 9th Gen. Core i7 CPU, PCIe16 Expansion, 8 x USB, 2 x COM, 2 x LAN, 2 x 2.5" SSD, 9V to 48V DC-in, Operating Temp. -20 to +60°C

Additional Options

- Nvidia GTX1660 Graphics Card

- Ethernet Expansion Module

Option 1: 4 x Gigabit Ethernet (RJ45)

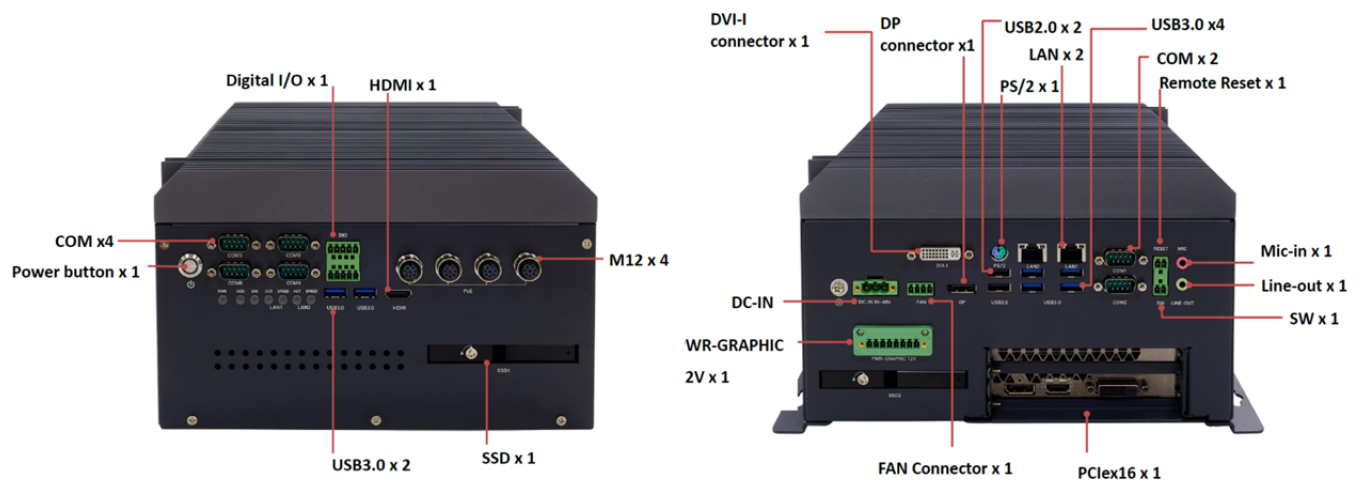
Option 2: 4 x Gigabit Ethernet (M12)

Option 3: 4 x Gigabit PoE (RJ45)

Option 4: 4 x Gigabit PoE (M12)

- COM Expansion Module

4 x RS232/422/485 with isolated DIDO (4 x DI, 4 x DO)



Dimensions

