IIIC-G2060S

Rugged GPU Server
Support NVIDIA RTX2060S

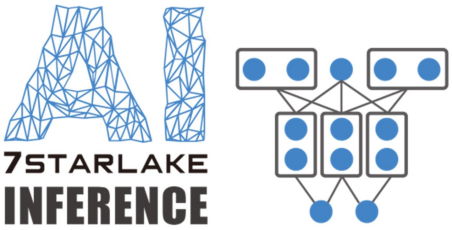
AI Accelerated GPU Server

- Intel Gen. 9th Core i Processor
- NVIDIA RTX2060S (8GB GDDR6, 2176 CUDA)
- DDR4 SO-DIMM 2666 MHz up to 64GB
- Support NVMe PCIe 3.0 For Fast Storage
- 6 x USB, 2 x LAN, 2xDP, 1x HDMI
- 9~36V DC-DC 300W (100~240V AC-DC options)
- Extended Operating Temperature ET: -20 to +55°C / UT: -30 to +70°C

1. Features

1-1 CPU GPU Platform – AI Training/ Inference

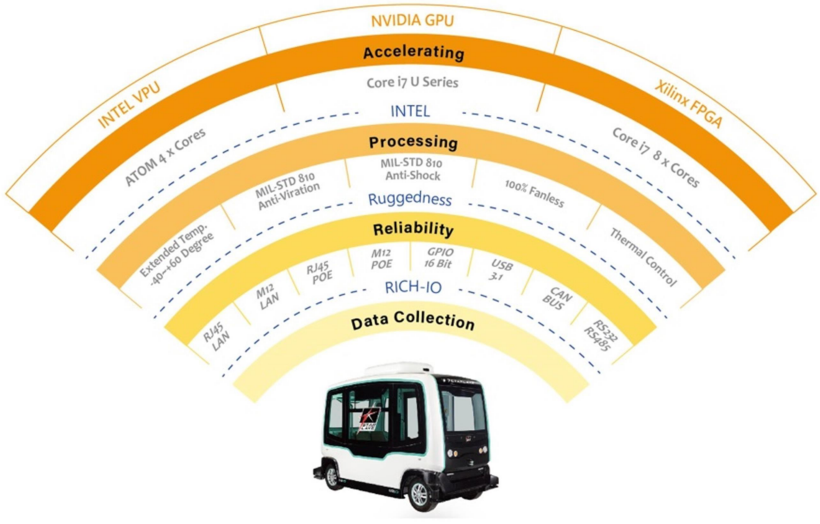
In this information explosion era, artificial intelligence, robotics, and industry 4.0 is the cornerstone of the success of advanced opportunities in any industry. The ceaseless progress of technology forces innovative opportunities to be generated. Robust sensors, secure communication, advanced video processing, and image solutions enable every industry to broaden new territories and improve operational accuracy in order to elevate human beings lives quality. The resulting outcome of information explosion is the requirement of speedy computing.



This is the moment when AI inference and machine learning (ML) come to rescue. Since these two is the backbone of complex computing and analysis, there is a growing demand for complicated AI-enabled services to deal with huge amount of information such as image and speech recognition, facial identification and personalized recommendations. AI inference is the process of utilizing AI to process data such as images or videos to identify whatever it has been asked to recognize. Machine learning is the process of using algorithm to compute data and analyse it into sorted and meaningful information.

Therefore, in order to manage a colossal amount of data and information, a compelling CPU-GPU configuration becomes dominant. The CPU is the brain of the computer that executes all calculations. CPUs are better for processing single, complex computations sequentially such as parsing through or interpreting code logic while GPUs can extensively accelerate the training process for analysing different information.

7StarLake's CPU-GPU series of AI Fusion computers provide complete structure and solution for processing with impressive durability for various unpredictable conditions such as autonomous driving. They are perfectly adaptive for multi-functional use as well. These computers can process diverse vision sensor data simultaneously, which provides a high-performance solution to end-users.



1-2 Intel 9th Gen. i7-9700TE

Intel i7-9700TE Specification	
Code Name	Coffee Lake
CPU Cores	8
CPU Threads	8
Frequency	1.80GHz
Max Turbo Frequency	3.80GHz
TDP	35W
Max Memory Size	128 GB
Memory Types	DDR4-2666
Max Memory Bandwidth	41.6 GB/s

Intel's i7-9700TE CPU (8 Cores, 1.8GHz Turbo up to 3.8GHz)deliver the efficient performance to consolidate multiple workloads. Compare to 7th Generation CPU Processor, Coffeelake-R platform provides up to 36% better integer multi-threaded compute intensive application performance. With this flexible platform which is designed for intellige nt devices and a mature ecosystem, i11S-G2060S is able to accelerate the development of your value-add solutions enabling you to quickly put your ideas into action.

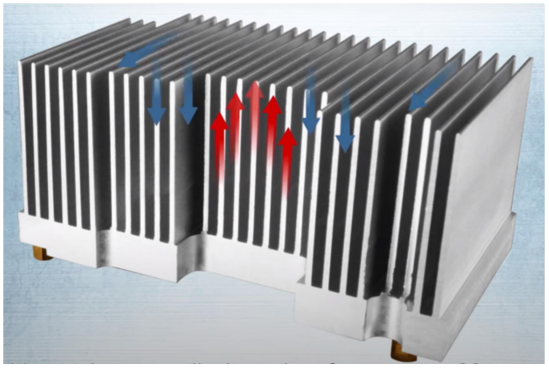
1-3 NVIDIA GeForce RTX 2060 Super

i11S-G2060S supports NVIDIA® GeForce® RTX 2060 SUPER™ which is powered by the NVIDIA Turing™ architecture, bringing superfast all-around performance and graphics to every gamer and creator. It's time to gear up and get super powers.

NVIDIA RTX 2060 Super	
GPU Architecture	Turing
CUDA cores	2176
Memory	8 GB
Memory Type	GDDR6
Max Power	175W
Core Speed	1470 - 1650 (Boost) MHz
Memory Speed	14000 MHz

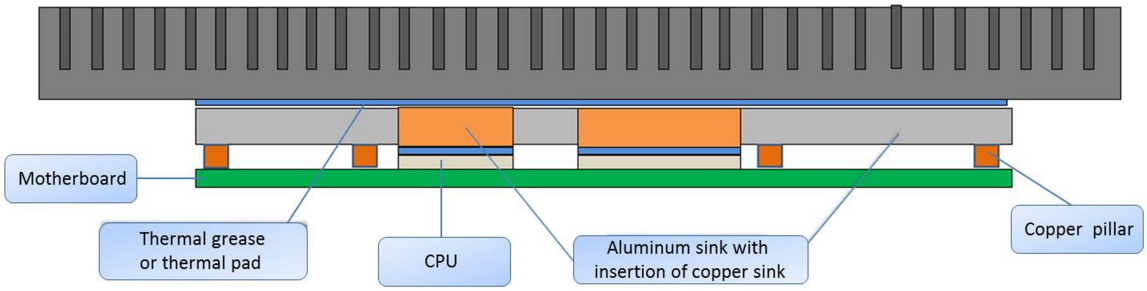
1-4 Thermal Solution : Conduction cooling

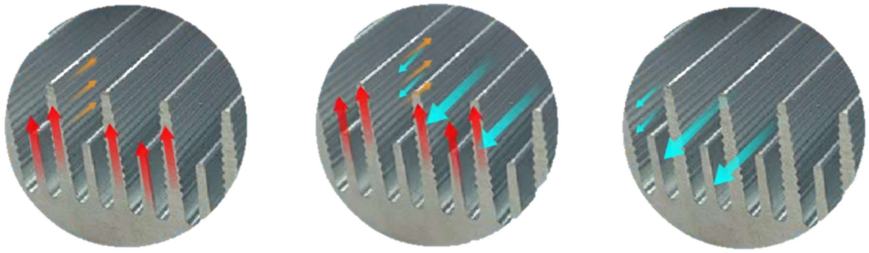
Aluminum heatsink are an ideal solution for rapidly and evenly distributing high density heat loads. The heat sink is often used to increase heat distribution to additional cold plate surface which directly contact with the heats and improves the overall thermal performance of the system. In addition, 7starlake's unique high thermal conductivity aluminum enclosure is designed with high and low fin plus wave line, creating adequate airflow and increasing the surface area and heat dissipation to reduce thermal resistance in contact with the cooling medium up to 30-40%.



7Starlake ensures that the computer systems we develop remain stable even in high temperature environments. We design to use efficient thermal solutions which can typically keep CPU and GPU module full loading with highly performance during high temperature.

The conduction cooling passive solutions don't require moving components, meaning high reliability, less wear and tear, and low maintenance. It guarantees that our products are made in accordance with your requirements on wide temperature range, compact design, durability, high performance and extended lifecycle. We implement a design principle that uses wide temperature grade components, optimal power circuits, constructed cooling & thermal design, and wideband extended temperature testing.





2. Specification

System	
CPU	9th Gen Intel® Coffee Lake LGA1151 Socket Processor Intel®Core i9-9700(8core/65W) Intel®Core i7-9700TE (8core/35W)
Memory type	2 x SO-DIMM DDR4 2666 MHz up to 64GB
Chipset	Intel® Q370 Chipset
Expansion slot	1 x M.2 (Key M, 2242/2260/2280) with PCIex4 and SATA3
GPU	RTX2060S (CUDA Core: 2176, 8GB GDDR6)
Display	
Display Port	Resolution up to 4096 x 2304 @ 60 Hz
HDMI	Resolution up to 4096 x 2160 @ 30 Hz
Storage	
Storage 1	1 x M.2 2280
Storage 2	2 x SATAIII
Ethernet	
Ethernet	Intel® I210 & I219LM GbE LAN (Support 10/100/1000 Mbps)
Front I/O	
Display Port	2 x DP, 1 x HDMI
Ethernet	2 x RJ45 ; 2 x 10G SFP options
USB	4 x USB 3.1(10Gb/s)
Audio	2 x 3.5mm Audio Jacks (1 x MIC, 1 x Line-Out)
Antenna	4 x Antenna hole(options)
Power Button	1 x Power Button w/Indicator LED
Rear I/O	
DC-IN	1 x 4P Terminal Block
USB	4 x USB2.0

Power Requirement

Power Input	9~36V 300W DC-DC 100~240V AC-DC for options

Applications & Operating System

Applications	Commercial and Industrial Platforms, Embedded Computing, Process Control, Intelligent Automation and manufacturing applications
OS	Windows 10 64Bit Ubuntu13.04, Ubuntu13.10, Ubuntu14.04, Fedora 20

Physical

Dimension	301 x 315 x 86 mm (W x D x H)
Weight	5.5kg
Chassis	SECC
Heatsink	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide
Chassis	SECC

Environmental

Green Product	RoHS compliance
Operating Temp.	w/o Graphic Card(ET : -20 to 55°C ; UT : -30 to 70°C ; w/Graphic Card(0~50°C)
Storage Temp.	-40 to 85°C
Relative Humidity	5% to 95%, non-condensing

Option Module

Fan	External Fan For Turbo Mode
Canbus	4 x Canbus FD
POE	2 x POE LAN
Wifi/BT	1 x Wifi+Bluetooth

MIL-STD-810 Specifications (Operating)

Method 502.5 Procedure 2	Low Temperature	-20°C, 4 hours, ±3°C
Method 501.5 Procedure 2	High Temperature	+55°C, 4 hours, ±3°C

Method 507.5	**Humidity**	**85%-95% RH without condensation, 24 hours/ cycle, conduct 10 cycles.**
Method 514.6	**Vibration**	**5-500Hz, Vertical 2.20Grms, 40mins x 3axis.**
Method 516.6	**Shock**	**6 Grms, 11ms, 3 axes.**

MIL-STD-810 Specifications (None-Operating)

Method 502.5	**Low Temperature Storage**	**-20°C, 4 hours, ±3°C**
Method 501.5	**High Temperature**	**+71°C, 4 hours, change rate:≦20°C/ Hour**
Procedure 1	**Storage**	**+63°C, 240 hours (By request)**
Method 514.6	**Vibration**	**5-500Hz, Vertical 2.20Grms, 40mins x 3axis.**
Method 516.6	**Shock**	**6 Grms, 11ms, 3 axes.**

Ordering Information

i11C-G2060S

Rugged GPU Server Support NVIDIA RTX2060S with Intel 8 /9th Gen i7-9700TE CPU, Rich I/O Interface, w/GPU, 9~36V DC-DC 300W,Operation Temp. 0 to 50°C

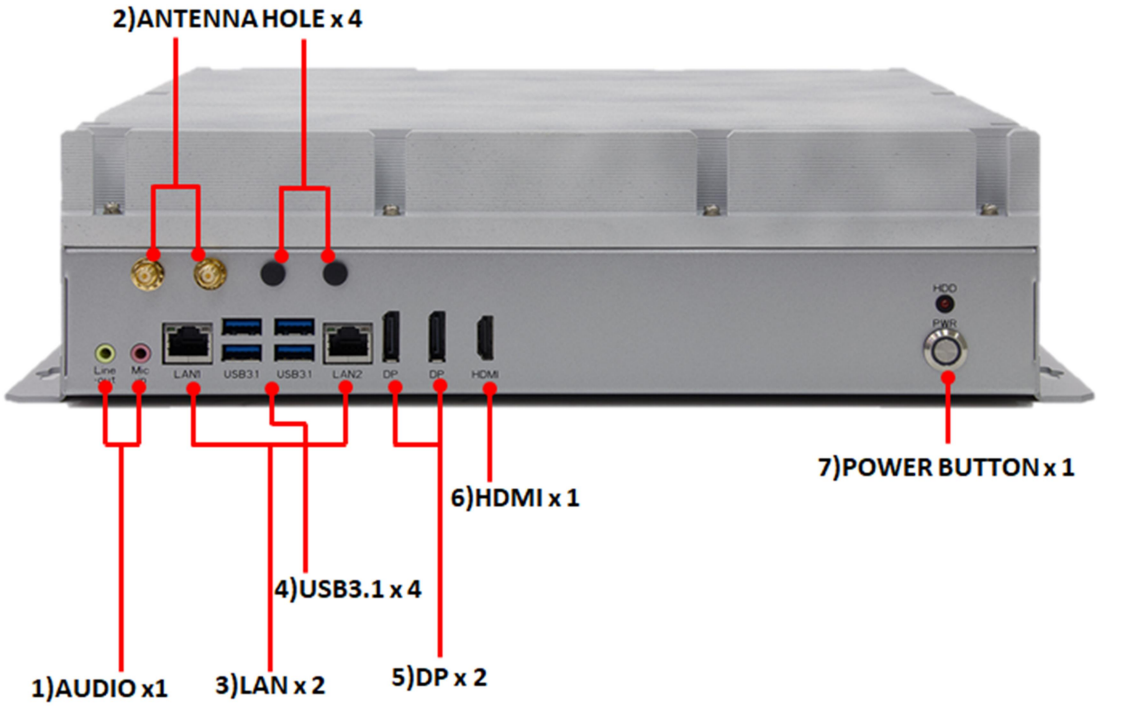
i11C-G2060S-ET

Rugged GPU Server Support NVIDIA RTX2060S with Intel 8 /9th Gen i7-9700TE CPU, Rich I/O Interface, w/o GPU, 9~36V DC-DC 300W,Operation Temp. -20 to 55°C

i11C-G2060S-UT

Rugged GPU Server Support NVIDIA RTX2060S with Intel 8 /9th Gen i7-9700TE CPU, Rich I/O Interface, w/o GPU, 9~36V DC-DC 300W,Operation Temp. -30 to 70°C

3. Panel IO Placement



4. Dimension