ITG-100-AL

Fanless Ultra Compact Size Embedded System

Specifications

Form factor	
SBC Form Factor	» CPU:
	Intel® Atom™ x5-E3930 1.3GHz (up to 1.8 GHz, dual core, TDP=6.5W)
	» Chipset:
	SoC
	» System Memory:
	1x 204-pin DDR3L SO-DIMM slot (system max. 8 GB)
	» Power:
	Input : 2-pin terminal block: 12 V DC
	Consumption: 12V @ 1A (Intel® Atom™ x5-E3930 CPU with 2GB 1600 MHz DDR3L memory)
	» Reliability:
	Operating Shock: Half-sine wave shock 5G, 11ms, 100 shocks per axis, IEC68-2-27
	Operating Vibration: MIL-STD-810G 514.6C-1 (SSD)
	Safety/EMC: CE/FCC
I/O Interface	
I/O Ports	» USB: 2 x USB 3.0
	» Ethernet:2 x RJ-45
	PCIe GbE by Intel® I211 controller
	» COM Port:2 x RS-232/422/485
	» Display:1 x VGA
Expansion Slots	
Expansion Slots	M.2:
	1 x M.2 2230 (A key, PCIe by 1, USB2.0)
	PCIe Mini:
	1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)
System	
Cooling method / System Fan	Fanless
Drive Bays	1 x 2.5” SATA 6Gb/s HDD/SSD bay
	(ITG-100-AL-E1 & ITG-100-AL-E1/2GB support)
Indicator&Buttons	
Buttons	1 x Power Button
	1 x Reset Button
	1 x AT/ATX Switch
Indicators	1 x LED for HDD (Yellow)
	1 x LED for Power (Green)
Physical Characteristics	
Construction	Extruded aluminum alloy
Color	
Color	Blue & Silver
Dimensions	
Dimensions	ITG-100-AL-E1/S: 137 x 102.8 x 36.2 (WxDxH) (mm)
	ITG-100-AL-E1: 137 x 102.8 x 56.2 (WxDxH) (mm)
Weight	
Weight	ITG-100-AL-E1/S: 0.67 kg/1.03 kg
	ITG-100-AL-E1: 0.86 kg/1.22 kg

Environment	
Operating Temperature	-20°C ~ 60°C with air flow (SSD)
Humidity	10% ~ 95%, non-condensing
OS Compatible	
OS Compatible	Microsoft Windows 10 / Windows 11, Linux

Ordering Information

ITG-100-AL-E1/S-R10	Fanless embedded system, Intel®Apollo Lake x5-E3930 1.3GHz (up to 1.8GHz, dual core), VGA, M.2, COM, 12V DC and RoHS
ITG-100-AL-E1/2GB/S-R10	Fanless embedded system, Intel®Apollo Lake x5-E3930 1.3GHz (up to 1.8GHz, dual core), 2GB DDR3L pre-installed memory, VGA, M.2, COM, 12V DC and RoHS
ITG-100-AL-E1/2GB-R10	Fanless embedded system, Intel®Apollo Lake x5-E3930 1.3GHz (up to 1.8GHz, dual core), 2GB DDR3L pre-installed memory, VGA, M.2, COM, 12V DC, Flexible I/O Expansion and RoHS
ITG-100-AL-E1-R10	Fanless embedded system, Intel®Apollo Lake x5-E3930 1.3GHz (up to 1.8GHz, dual core), VGA, M.2, COM, 12V DC, Flexible I/O Expansion and RoHS

Packing List

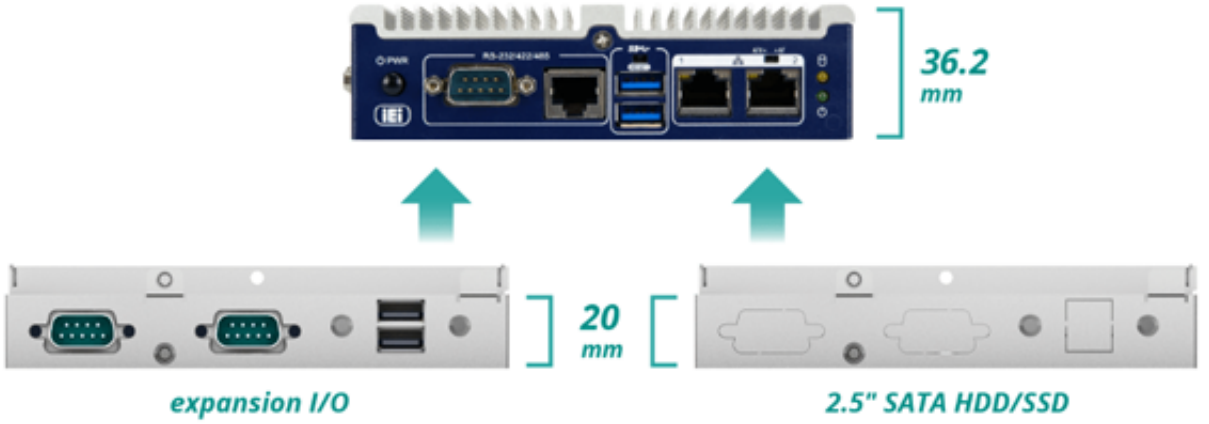
1x Mounting bracket	1 x Screw kit
1 x SATA cable & SATA power cable(for ITG-100-AL-E1 only)	1 x RJ-45 to DB-9 COM port cable

Ultra-compact Edge Computing System

The ITG-100-AL uses Intel® Atom™ X5-E3930 1.3GHz as its processor with max. 8GB memory. Space limitation is one of the constraints commonly seen in today's industrial environment. Under tight restrictions, the ITG-100-AL not only provides palm-sized design to meet the space requirement, but also comes with adequate basic I/O ports and supports a wide range of operating temperature (-20~60°C), making it suitable for acting the role as a data collection gateway for various applications. In order to respond the demand of adding more functions to the system, the ITG-100-AL is equipped with a full-size PCIe Mini slot reserved for 3G/4G and a M.2 A-key slot reserved for Wi-Fi to provide function expansion with easy access. Additional 2.5" SATA HDD/SDD bay, knockout-hole layer with selectable I/O interface, or both of above-mentioned modularized options could be implemented into the ITG-100-AL to best fit users' preferences and still remaining its small size.

High Expansion Capability with Modular Design

Additional block layers can be assembled to achieve I/O interface expansion and data storage requirement. With choices of adding a 2.5" SATA HDD/SSD bay, a knockout-hole layer with selectable I/O interface, or both of above-mentioned options, the ITG-100-AL could be modularized to what best fit users' preferences and still remaining its compact size.



Ultra-compact Size

Space limitation is one of the constraints commonly seen in today's industrial environment. Under tight restrictions, the ITG-100-AL not only provides palm-sized design to meet the space requirement, but also comes with adequate basic I/O interfaces for various applications.

Functionality Expansions

In order to respond the demand of adding more functions to the system, the ITG-100-AL is designed with a full-size PCIe Mini slot reserved for 3G/4G and a M.2 A-key slot reserved for Wi-Fi to provide function expansions with easy access.

Full-size PCIe Mini

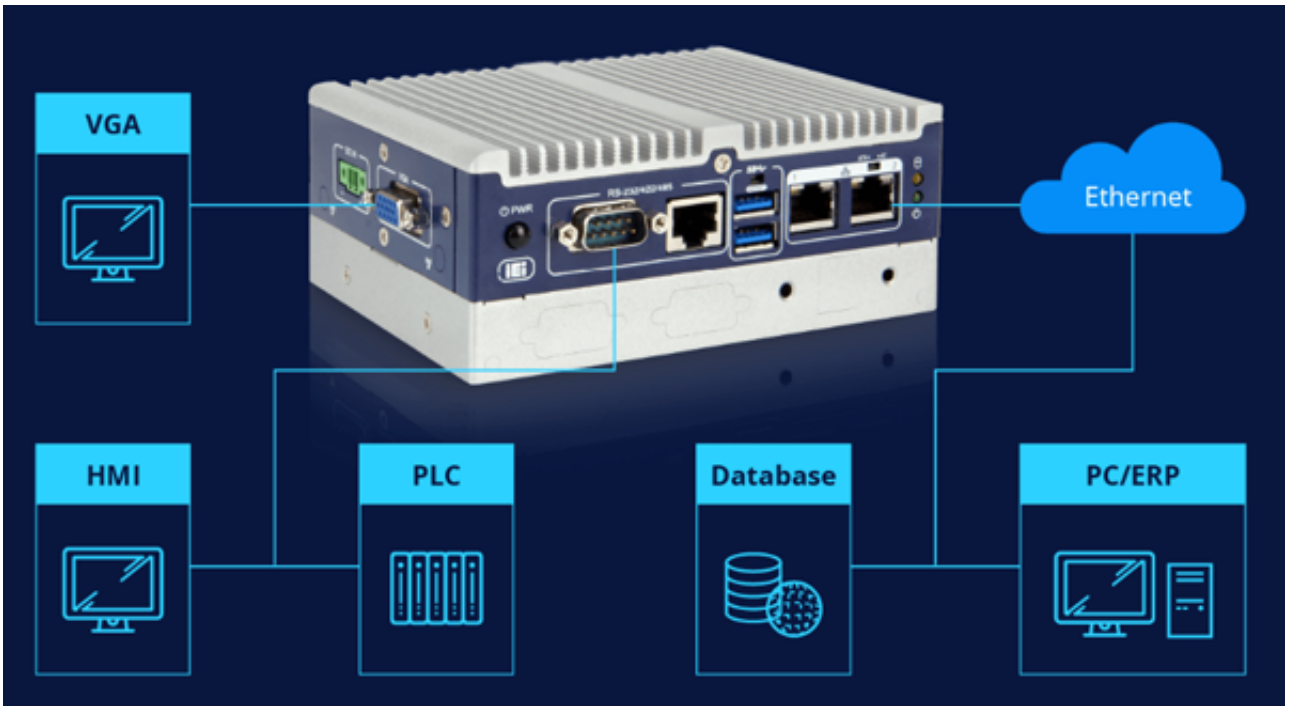
M.2 A key

Intelligent Data Collection Gateway

The followings are some of challenges we may face when deploying new IIoT technology on factory equipment.

*Collecting large amounts of data from sensors
*Computing and analyzing big data
*Delivering the computed result to other machines & devices
*Enhancing data security

IEI ITG-100-AL features Intel® Atom CPU have the capability to provide intelligent machinery and big data analysis. Its rich I/O interfaces and multiple expansions, allowing users to connect different devices for increasing productivity by realizing smart manufacturing. IEI also offer ITG-100AI which is combined with an AI accelerator card to implement as an AI inference system for object detection.



EV Charging Station Gateway

IEI ITG-100-AL, supports -20°C to 50°C operating temperatures to enable the connection of charge units and monitoring sensors in critical environments. Under tight restrictions, it not only provides palm-sized design to meet the space requirement, but also comes with adequate basic I/O interfaces. As an IoT gateway, the ITG-100 can collect, analyze data and transfer the data to the control center through wireless connection.