

# 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 Support            |  |
| OS Support            | 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

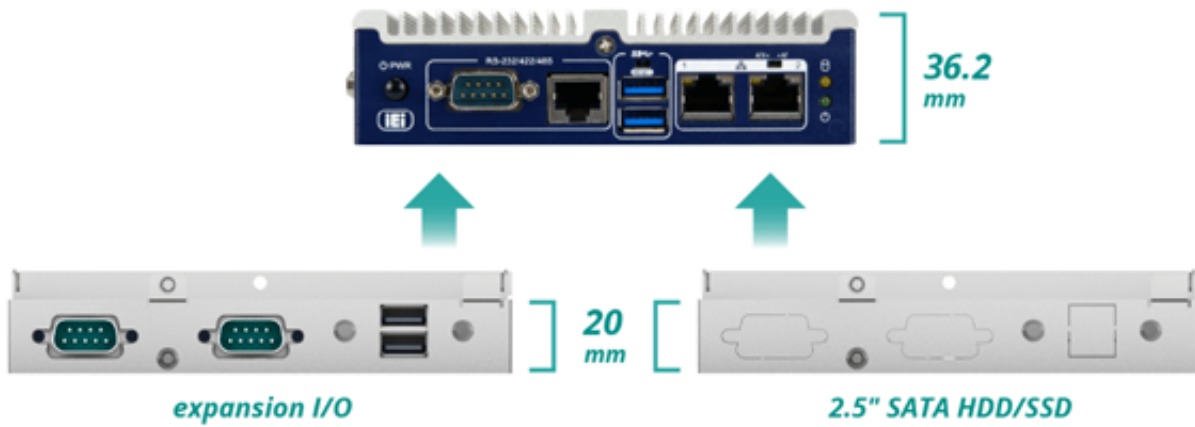
|   |                                  |
|---|----------------------------------|
| 1x Mounting bracket                                       | 1 x Screw kit                    |
| 1 x SATA cable & SATA power cable(for ITG-100-AL-E1 only) | 1 x RJ-45 to DB-9 COM port cable |

## 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

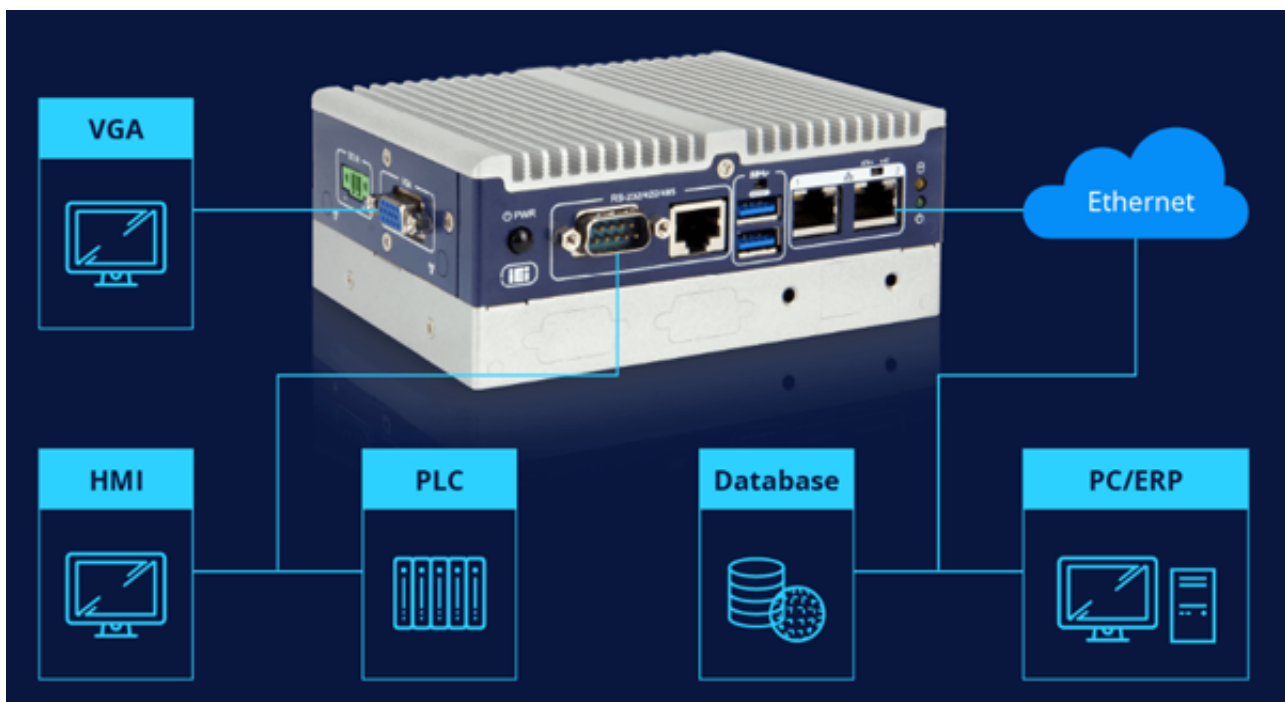


## Intelligent Data Collection Gateway

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.

