

# ITG-100-AL

- Ultra Compact Size
- Fanless DIN-Rail Embedded System
- Intel® Atom™ x5-E3930 1.3GHz (up to 1.8GHz) Solution



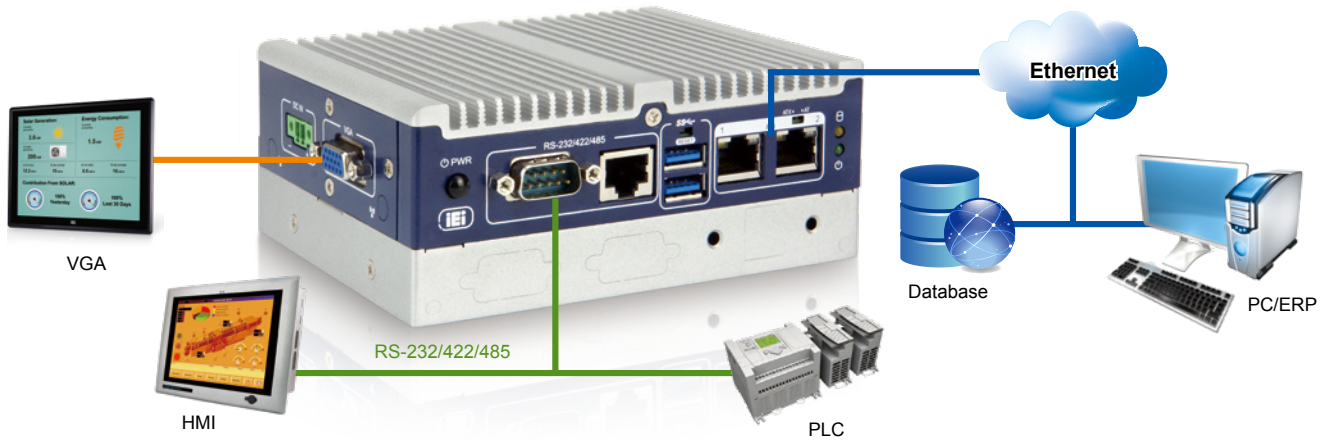
## Features

- Intel® Atom™ x5-E3930 1.3GHz (up to 1.8 GHz)
- Two GbE LAN ports
- Two RS-232/422/485
- Full-size PCIe Mini slot and M.2 A-key slot for expansion



## Intelligent Gateway

The ITG-100-AL equips with basic I/O ports and supports a wide range of operating temperature, making it suitable for acting the role as a data collection gateway in smart factory environments.



## A Wide Range of Applications

Given its practical features, the ITG-100-AL can be applied to a variety of application fields, such as military, industrial automation, and traffic control.

Military

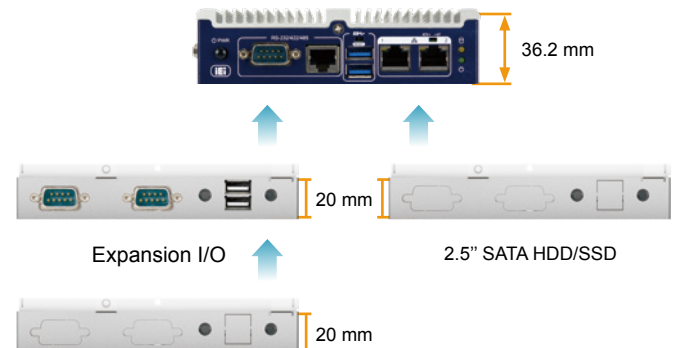
Industrial Automation

Traffic control



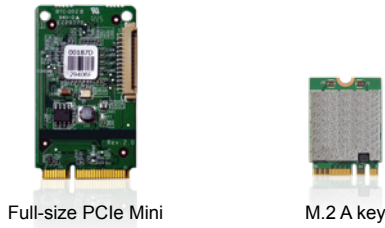
## Multi-layer Feature

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.



### 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.



### Ultra-compact Size

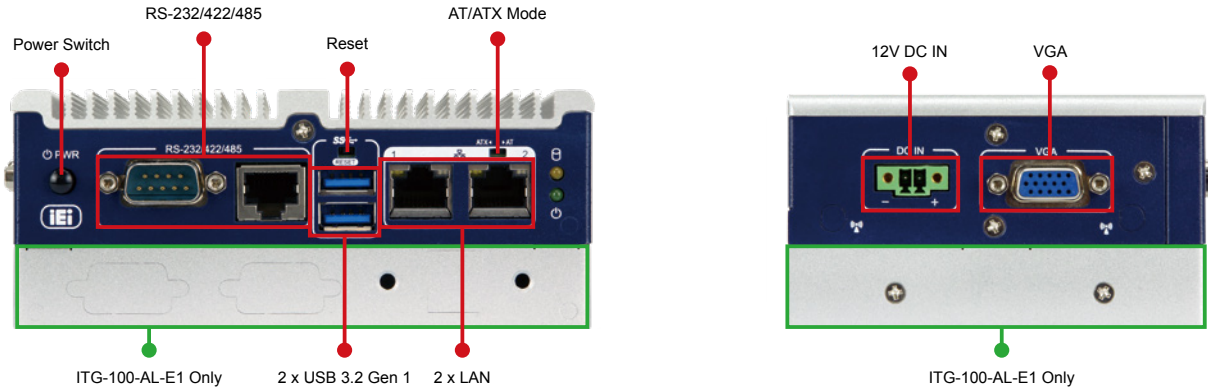
Space limitation is one of the constraints commonly seen in today's industrial environment. Under tight restrictions, the ITG-100-AL not only provides palm-sized design to meet the space requirement, but also comes with adequate basic I/O interfaces for various applications.



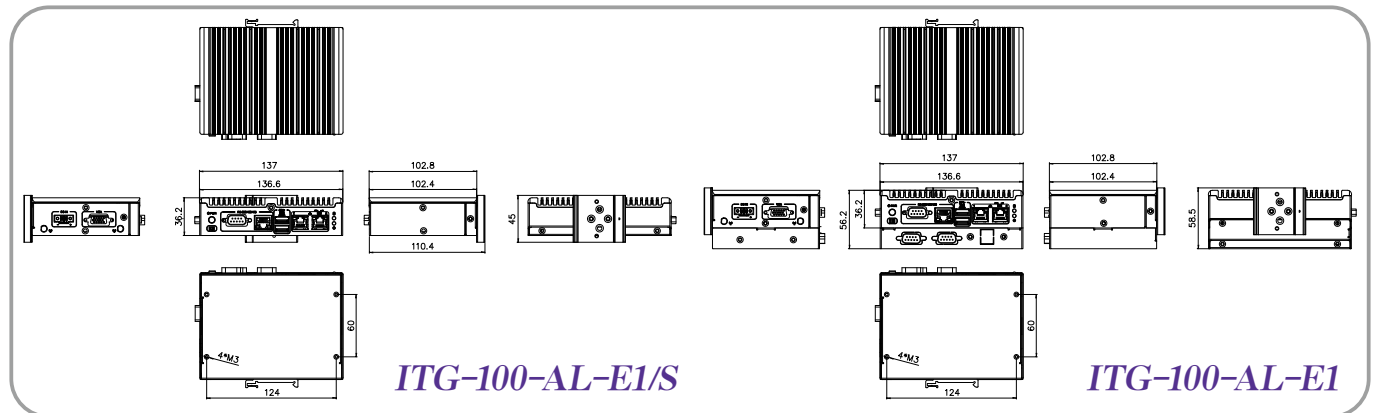
### Specifications

Model Name		ITG-100-AL-E1/S	ITG-100-AL-E1
Chassis	Color	Blue & Silver	
	Dimensions (WxDxH)(mm)	137 x 102.8 x 36.2	137 x 102.8 x 56.2
	System Fan	Fanless	
	Chassis Construction	Extruded aluminum alloy	
Motherboard	CPU	Intel® Atom™ x5-E3930 1.3 GHz (up to 1.8GHz, dual-core, TDP=6.5W)	
	Chipset	SoC	
	System Memory	1x 204-pin DDR3L SO-DIMM slot (system max. 8 GB) (ITG-100-AL-E1/2GB/S-R10 SKU is pre-installed with 2 GB memory)	1x 204-pin DDR3L SO-DIMM slot (system max. 8 GB) (ITG-100-AL-E1/2GB-R10 SKU is pre-installed with 2 GB memory)
Storage	Hard Drive	N/A	1 x 2.5" SATA 6Gb/s HDD/SSD bay
	eMMC	1 x eMMC 5.0 support (up to 32GB, optional)	
	Micro SD	1 x Micro SD slot (optional)	
I/O Interfaces	USB 3.2 Gen 1 (5Gb/s)	2	
	USB 2.0	2 by pin-header (optional)	
	Ethernet	2 x RJ-45 PCIe GbE by Intel® I211-AT controller	
	COM Port	2 x RS-232/422/485 (DB-9/RJ-45) 2 x RS-232 by pin-header (optional)	
	Digital I/O	8-bit digital I/O, 4-bit input/4-bit output by pin-header (optional)	
	Display	1 x VGA	
	Resolution	Up to 1920x1080@60Hz	
	Wireless	1 x 802.11a/b/g/n/ac (optional)	
	Others	1 x Power button, 1 x Reset button, 1 x AT/ATX switch, 1 x LED for HDD (yellow), 1 x LED for power (green)	
	Expansions	M.2	1 x 2230 A key (PCIe x1/ USB 2.0)
PCIe Mini		1 x Full-size (PCIe/ USB 2.0/ SATA)	
Power	Power Input	2-pin terminal block: 12 V DC	
	Power Consumption	12V @ 1A (Intel® Atom™ E3930 with 2GB memory)	
Reliability	Mounting	DIN-rail / Wall mounting	
	Operating Temperature	-20°C ~ 60°C with air flow (SSD), 10% ~ 95%, non-condensing	
	Storage Temperature	-30°C ~ 70°C with air flow (SSD), 10% ~ 90%, non-condensing	
	Operating Shock	Half-sine wave shock 5G, 11ms, 100 shocks per axis, IEC68-2-27	
	Operation Vibration	MIL-STD-810G 514.6C-1 (SSD)	
	Weight (Net/Gross)	0.67 kg/1.03 kg	0.86 kg/1.22 kg
	Safety / EMC	CE/FCC	
OS	Watchdog Timer	Programmable 1 ~ 255 sec/min	
	Supported OS	Microsoft® Windows 10 / Linux	

## Fully Integrated I/O



## Dimensions (Unit: mm)



## Ordering Information

Part No.	Description
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-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
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

## Options

Item	Part No.	Description
4GB Memory	79B00-G004-XXX-RS*	DDR3L (204 PIN);4GB;1.35V;0° ~ 85°;RoHS
8GB Memory	79B00-G008-XXX-RS*	DDR3L (204 PIN);8GB;1.35V;0° ~ 85°;RoHS
Wi-Fi Module	27319-000009-RS**	Wireless Lan Module;Wireless LAN & Bluetooth M.2 Module;Sparklan;R9701810011;IEEE802.11a/b/g/n/ac;2.412GHz~2.4835GHz;5.15GHz~5.85GHz;M.2 2230;;3.3V;22*30*2.15mm;QCNFA364A;QCA6174A-5;2x2 MIMO;Dual Band;WCBN808A-Q2;CCL;CCL;RoHS
Antenna	32505-000900-100-RS**	External Antenna;WLAN;RG 178;108MM;TANK-700-QM67-R10;PEAK GAIN 2.0DBI;Exceltek;2.4-2.5GHz/5.15-5.85GHz;REVERSE SMA PLUG;RoHS
RF Cable	32501-004000-100-RS**	RF;RF CABLE;LINE DIAMETER:0.81mm;250MM;;;50Ω;Sparklan;0-6GHz;VSWR≤1.3;I-PEX MHF-4 Plug;REVERSE SMA JACK;NUT*1;WASHER*1;;RoHS
DIO Cable	32231-000300-100-RS	FLAT CABLE;DIO CABLE;;2;50MM;28AWG;(A)D-SUB 9P FEMALE;(B)DU PONT 2*5P P=2.0 FEMALE, RoHS
COM Cable	32205-007500-200-RS	FLAT CABLE;RS-232/422/485;COM CABLE;;2;50mm;28AWG;(A)D-SUB 9P MALE;(B)DU PONT 2*5P P=2.0 FEMALE, RoHS
USB Cable	32001-000800-300-RS***	ROUND CABLE;USB CABLE;;2;150MM;28AWG;(A)DOUBLE LAYER USB A TYPE FEMALE(WITH EAR);(B)DU PONT 2*4P P=2.0 FEMALE, RoHS
HDD Drive Bay	ITG-HB-R10***	HDD Bay for ITG-100 only
Exp. Chassis	ITG-EXP-R10	Expansion Chassis for ITG-100 only
Adapter	63040-010036-210-RS****	Adapter Power;FSP;FSP036-RHBN3;9NA0362707;;Vin:90 ~ 264VAC;36W;Dim:37.8*89.8*27.0mm;Plug=7.5mm;Cable=1500mm;Erp(NO LOAD 0.075W);Vout:12VDC;Φ2.5/Φ5.5/lock;CCL;RoHS
Power Cable	32102-045700-100-RS ****	WIRE CABLE;POWER CABLE;;2;200mm;18AWG;(A)DC JACK 5.5*2.5;(B)TERMINAL BLOCK 2P P=3.5 180°, RoHS
Power Cord	32702-000400-200-RS	European power cord
OS:Windows Embedded 10	ITG-100-W10E64-E-R10	OS Image with Windows® 10 IoT Enterprise Entry 64-bit for ITG-100-AL Series, with DVD-ROM, RoHS

\* It is just a general P/N. Please contact your sales representatives to assist you in ordering.  
 \*\* Each Wi-Fi module needs two antennas and two RF cables to fully support Wi-Fi function.  
 \*\*\* This USB cable cannot be used at the layer where the HDD drive bay is located.  
 \*\*\*\* It is required to order Power Cable together with Adapter for power usage.

## Packing List

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