

GES-BIOTH04

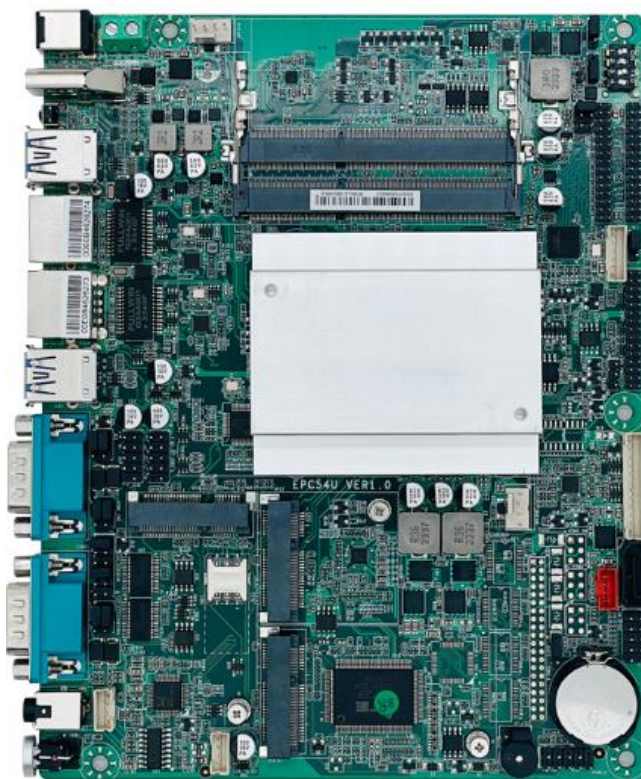
Motherboard

Intel® Haswell-U or Broadwell-U, Celeron or Pentium, Core® i3/i5/i7 CPUs

Features

- Haswell-U or Broadwell-U, Celeron or Pentium, Core® i3/i5/i7 CPUs
- 2x SO-DIMM Slot, Support Dual-Channel 1600/1333MHz DDR3 Memory, Up to 16GB
- Display Options Include HDMI, LVDS, Dual eDP, and VGA (Internal Pin Header)
- 2x Realtek RTL8111H Gigabit Network Ports
- 2x Mini-PCIe (WIFI/4G) Slots and 1x mSATA
- 9x USB Ports
- Built-In 6x RS232 Serial Ports, Support up to 4x RS485
- 190* 150mm Form Factor

Appearance





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Revision Table

Date	Revision	Content	By
2024/10/11	0.1	Mother Board Datasheet	Leon

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Specification

Mother Board	
CPU	Haswell-U or Broadwell-U, Celeron or Pentium, Core® i3/i5/i7 CPUs
Memory	2x SO-DIMM Slot, Supports Dual-Channel 1600/1333MHz DDR3 Memory, Maximum Supports Up to 16GB
Graphics	Integrated Intel® HD Graphics 4000
Display	1x HDMI 1x LVDS 1x VGA 2x eDP Supports VGA, HDMI, LVDS and Dual eDP for Synchronous/Asynchronous Display
Ethernet	2x Realtek RTL8111H Gigabit Network Ports, Supports Wake-On-LAN/PXE
Storage	1x SATA 3.0 1x mSATA3.0 Slot
Audio	ALC897 7.1 Channel High-Definition Audio Controller, Supports MIC In/Line-Out , Amplifier 2Ω/5W Dual-Channel
Expansion Slot	1x Mini-PCIe Slot, Supports WIFI/4G module
Back Panel I/O	1x HDMI 1x Power Switch Button with LED 1x Clear CMOS Switch 4x USB 3.0 2x RJ-45 Gigabit Network (Single LAN, LAN1 and F_USB3.0 are Mutually Exclusive) 1x Line-Out and MIC In Combo 2x DB9 RS232 (Optional COM1 and COM2 RS485 via jumper) 1x 12V DC Power Input

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Specification

Internal I /O	2x eDP Interface 2*15Pin, Supports Dual eDP Display 1x JVGA Interface 1*12Pin 1x LVDS Interface 2*15Pin, Supports Dual-Channel 24bit 1x Backlight Power Interface 1*6Pin 2x USB 2.0 Pin Header Interfaces 2*5Pin (Support 4x USB 2.0) 1x USB 2.0 Interface 1*4Pin, Supports Touch Wake-Up 1x Amplifier Port 1*4Pin 4x COM Ports 2*20Pin (COM3 and COM4 Supports RS485) 1x HDD Power Connector 1x 4 Pin ATX Power Connector 1x Front Panel Switch and LED Indicator Interface 2*5Pin
Fan Connector	1x 4 Pin CPU Smart Fan Connector 1x 4 Pin System Smart Fan Connector
GPIO	Supports 4 GPIO Inputs/Outputs
BIOS	64Mb Flash ROM
Watchdog	Supports Hardware Reset Function (256 Levels, 0~255 Seconds)
Support OS	Windows 7/Windows 10/Linux
Power Supply	Supports DC 12V Input
Dimension	190* 150mm

Environment Compliance

Operating Temp.	-20°C ~ 60°C
Storage Temp.	-20°C ~ 70°C
Humidity	5% to 95%RH, Non-Condensing

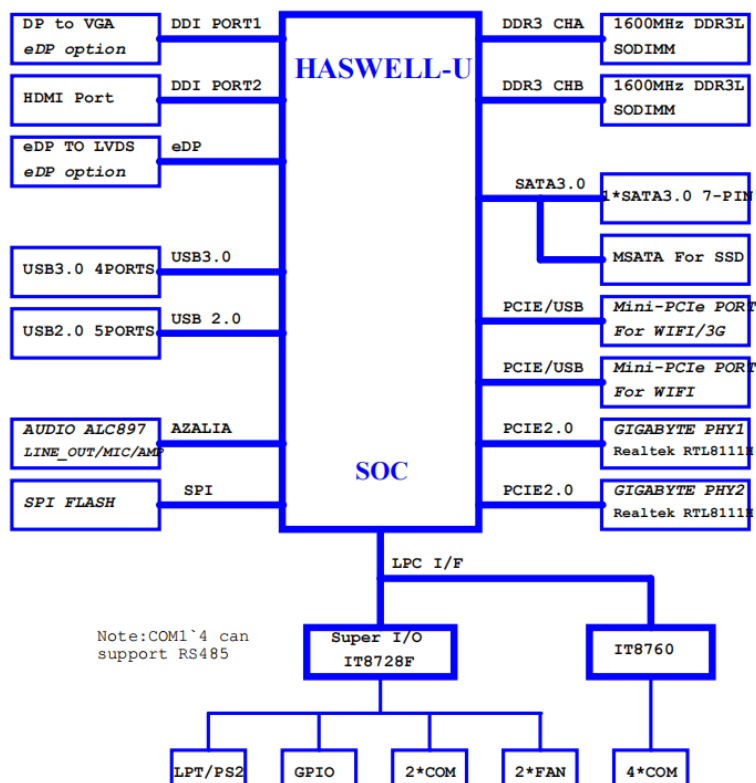
Environmental performance may vary according to the integration method or final integration scenario.

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Block Diagram



Interface Options

No.	Interface Options	CPU	Cores	Frequency	TDP	DDR	eDP	HDMI	VGA	LVDS	LAN	USB	COM/485	POWER
1	-	i3-4030U	2	1.9GHz	15W	DDR3	2	1	1	1	2	9	2/2	12V
2	A	i3-5005U	2	2.0GHz	15W	DDR3	2	1	1	1	2	9	2/2	12V
3	B	i3-5005U	2	2.0GHz	15W	DDR3	2	1	1	1	2	9	6/2	12V
4	-	i5-4300U	2	1.9GHz	15W	DDR3	2	1	1	1	2	9	2/2	12V
5	-	i5-5200U	2	2.2GHz	15W	DDR3	2	1	1	1	2	9	2/2	12V
6	A	i7-4600U	2	2.1GHz	15W	DDR3	2	1	1	1	2	9	2/2	12V
7	B	i7-4600U	2	2.1GHz	15W	DDR3	2	1	1	1	2	9	6/2	12V
8	-	i7-5600U	2	2.7GHz	15W	DDR3	2	1	1	1	2	9	2/2	12V

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Deliverables

1	Motherboard Intel® Haswell-U or Broadwell-U Celeron, Pentium, Core® i3/i5/i7 CPU
Others	Optional Assemblies as per Ordering Details

Ordering Details

GES-BIOTH04 - P P P P P S M T C

Processor:

(4030U): i3-4030U
(5005U): i3-5005U
(4300U): i5-4300U
(5200U): i5-5200U
(4600U): i7-4600U
(5600U): i7-5600U

Storage

(N): None
(1): 8GB
(2): 16GB
(3): 32GB
(4): 64GB
(5): 120~128GB
(6): 240~256GB
(7): 480~512GB
(8): 960~1TB
(9): 2TB
(A): 4TB

Memory

(N): None
(1): 2GB
(2): 4GB
(3): 8GB
(4): 16GB

Telecommunication

(N): None
(F): 5G
(L): 4G/LTE
(S): 3G
(G): 2G

Connectivity (Wireless)

WIFI/GPS/BT
(N): None
(A): WIFI, BT, GPS
(B): BT
(C): WIFI, GPS
(D): BT, GPS
(E): WIFI, BT
(G): GPS
(W): WIFI

Example: GES-BIOTH04-5005U43NN

Motherboard - Intel® Haswell-U or Broadwell-U Celeron, Pentium, Core® i3/i5/i7 CPU; with i3-5005U CPU, 64GB Storage, 8GB RAM

Optional Interfaces listed in the datasheet could be set upon request.

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