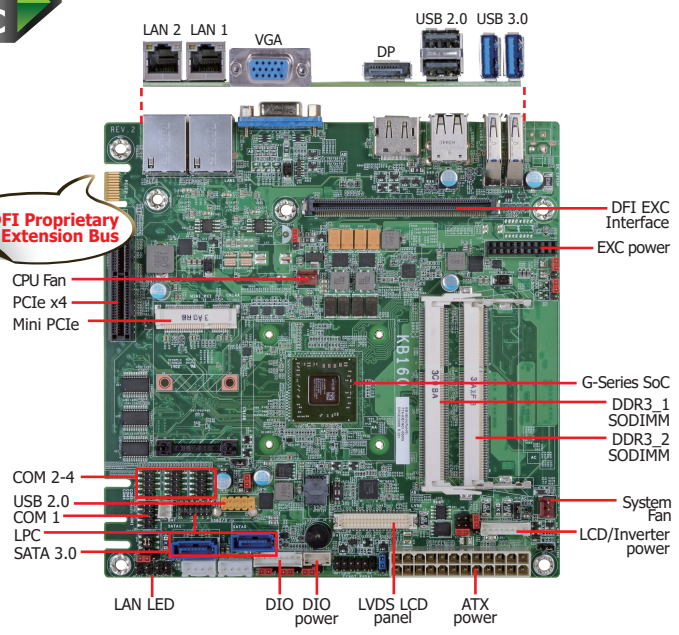




# KB160

G-Series SoC

One DFI Proprietary Extension Bus



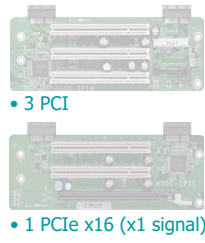
## Features

MEMORY	2 DDR3/DDR3L SODIMM up to 8GB
EXPANSION	1 PCIe x4 1 Mini PCIe 1 DFI Proprietary Extension Bus 1 DFI EXC interface
DISPLAY OUTPUTS	1 VGA, 1 LVDS, 1 DP
LAN	2 LAN
COM	4 COM
USB	6 USB: 2 USB 3.0, 4 USB 2.0
STORAGE	2 SATA 3.0
DIO	8-bit DIO



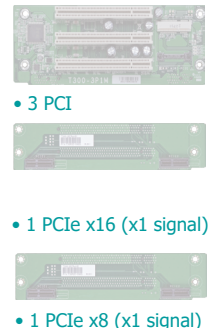
## 5 Riser Cards for DFI Proprietary Extension Bus

### H Series:



- 3 PCI
- 1 PCIe x16 (x1 signal)

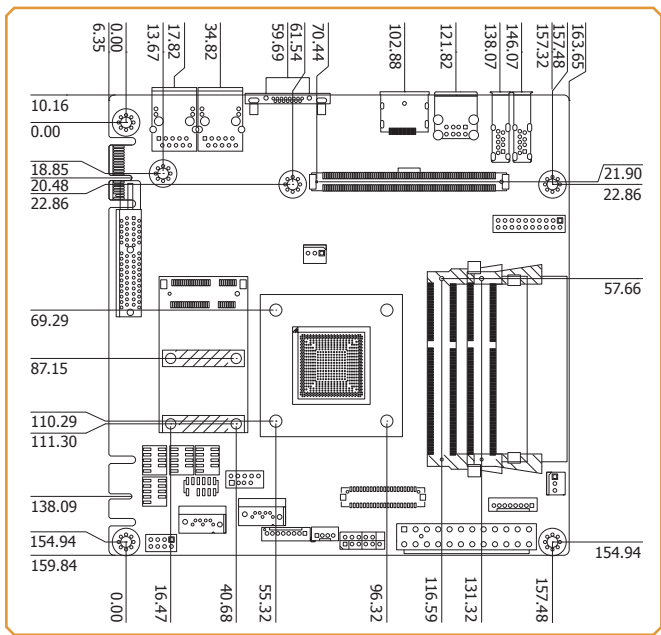
### T Series:



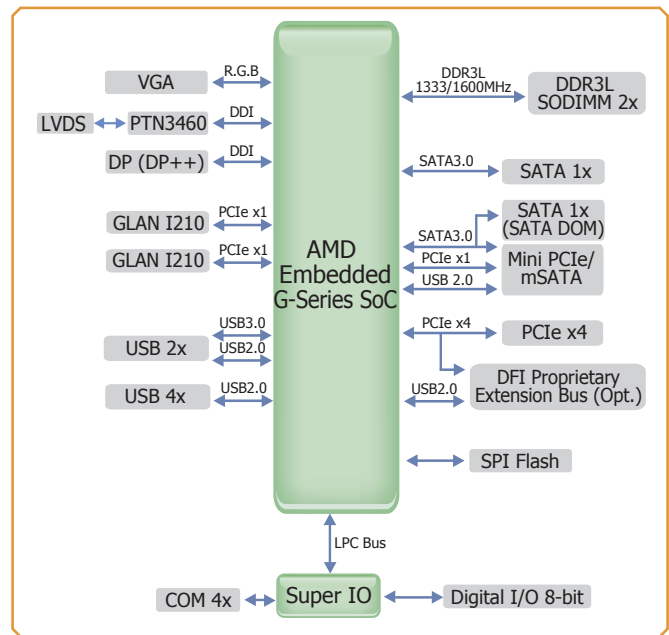
- 3 PCI
- 1 PCIe x16 (x1 signal)
- 1 PCIe x8 (x1 signal)



## Mechanical Drawing



## Block Diagram



# KB160

**Specifications** \* Optional and is not supported in standard model. Please contact your sales representative for more information.

**APU (Accelerated Processing Unit)**

- AMD® Embedded G-Series SoC FT3 BGA
- 28nm process technology
- Please refer to the Ordering Information below*

**SYSTEM MEMORY**

- Two 204-pin DDR3/DDR3L SODIMM sockets
- Supports DDR3/DDR3L 1066/1333/1600MHz
- Supports up to 8GB system memory
- Supports single channel memory interface
- DRAM device technologies: 1Gb, 2Gb and 4Gb DDR3L DRAM technologies are supported for x8 and x16 devices, unbuffered, non-ECC

**EXPANSION SLOTS**

- 1 PCIe x4 slot
- 1 DFI Proprietary Extension Bus for PCIe/PCI expansion
- 1 Mini PCIe slot
  - Supports USB and PCIe signals
  - Supports mSATA\*
  - Supports full size Mini PCIe card
- 1 DFI EXC interface for I/O expansion
  - 1 PCIe x1
  - 1 High Definition Audio
  - 2 Serial ports
  - 1 PS/2 keyboard/mouse
  - 1 USB 2.0
  - 1 SMBus
  - 1 LPC

**ONBOARD GRAPHICS FEATURES**

- AMD® HD 8000 Series Graphics
- Display ports: VGA, LVDS and DP
- VGA: resolution up to 2560x1600 @ 60Hz, 24-bit
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- DP: supports DP++, resolution up to 4096x2160 @ 30Hz
- Supports hardware acceleration for DirectX 11.1, H.264, MPEG-2, MPEG-4 AVC, VC-1 and WMV

**ONBOARD LAN FEATURES**

- 2 Intel® I210 PCI Express Gigabit Ethernet controllers
- Integrated 10/100/1000 transceiver
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

**SERIAL ATA INTERFACE**

- 2 SATA 3.0 ports with data transfer rate up to 6Gb/s
  - SATA port 1 provides adequate space for SATA DOM
  - One multiplexed with mSATA (Mini PCIe)\*
- Integrated Advanced Host Controller Interface (AHCI) controller

**TRUSTED PLATFORM MODULE (TPM)\***

- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

**REAR PANEL I/O PORTS**

- 1 DB-15 VGA port
- 1 DP port
- 2 RJ45 LAN ports
- 2 USB 2.0/1.1 ports
- 2 USB 3.0 ports

**I/O CONNECTORS**

- 1 connector for 2 external USB 2.0/1.1 ports
- 1 vertical USB 2.0/1.1 port\*
- 4 connectors for 4 external serial ports (2.0mm pitch)
  - 1 RS485
  - 3 RS232
- 1 LVDS LCD panel connector
- 1 LCD/inverter power connector
- 1 8-bit DIO connector
- 1 Digital I/O power connector
- 1 LAN LED connector
- 1 LPC connector
- 2 Serial ATA connectors
- 1 24-pin ATX power connector
- 1 front panel connector
- 1 chassis intrusion connector
- 2 fan connectors

**WATCHDOG TIMER**

- Watchdog timeout programmable via software from 1 to 255 seconds

**BIOS**

- AMI BIOS
- 32Mbit SPI BIOS

**ENERGY EFFICIENT DESIGN**

- Supports ACPI
- System Power Management
- Wake-On-Events include:
  - Wake-On-PS/2 KB/Mouse\*
  - Wake-On-USB KB/Mouse
  - Wake-On-LAN
  - RTC timer to power-on the system
- AC power failure recovery

**DAMAGE FREE INTELLIGENCE**

- Monitors CPU/system temperature and overheat alarm
- Monitors VCore/12V/5V/DDR voltages and failure alarm
- Monitors CPU/system fan speed and failure alarm
- Read back capability that displays temperature, voltage and fan speed

**POWER CONSUMPTION**

- TBD

**OS SUPPORT**

- Windows 7 Ultimate x86 & SP1 (32-bit)
- Windows 7 Ultimate x64 & SP1 (64-bit)
- Windows 8 Enterprise x86 (32-bit)
- Windows 8 Enterprise x64 (64-bit)

**TEMPERATURE**

- Operating: 0°C to 60°C
- Storage: -20°C to 85°C

**HUMIDITY**

- 5% to 95%

**MTBF**

- 324,175 hrs @ 25°C; 156,986 hrs @ 45°C
- Calculation model: Telcordia Issue 2, Method I Case 3
- Environment: GB, GC – Ground Benign, Controlled

**DIMENSIONS**

- Mini-ITX form factor
- 170mm (6.7") x 170mm (6.7")

**Ordering Information**

Model Name			Processors
<b>KB160</b>	-	<b>N</b>	- <b>420C</b>
			420C: AMD® GX-420CA, Quad Core, 2M Cache, 2.0GHz, 25W 415G: AMD® GX-415GA, Quad Core, 2M Cache, 1.5GHz, 15W 217G: AMD® GX-217GA, Dual Core, 1M Cache, 1.65GHz, 15W 210H: AMD® GX-210HA, Dual Core, 1M Cache, 1.0GHz, 9W

**Packing List**

- 1 KB160 motherboard
- 1 Serial ATA data cable
- 1 DVD

**Optional Items**

• USB port cable	332-253010-026G
• Serial ATA data with power cable	A81-002013-000G
• Power adapter (100W, 12V, Level 6)	671-110002-100G
• I/O shield	A49-KB1600-000G