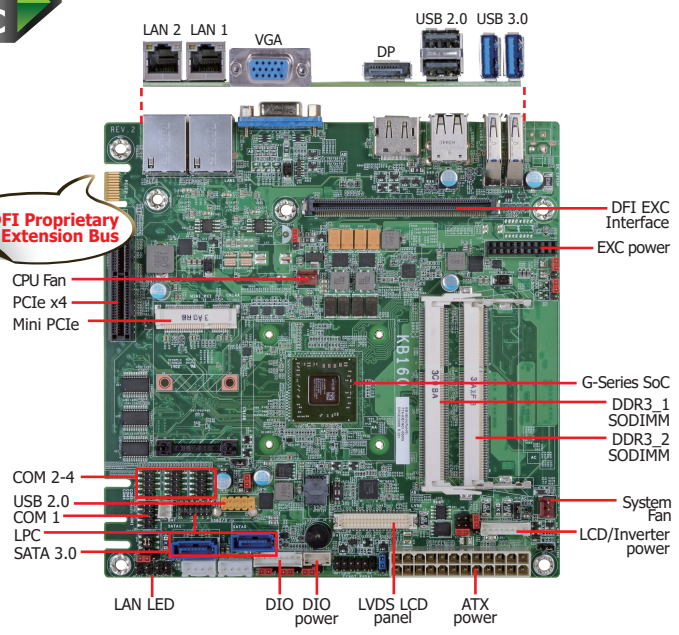




KB160

G-Series SoC

One DFI Proprietary Extension Bus



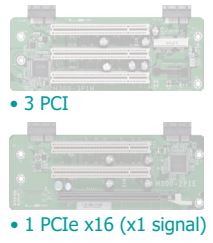
Features

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

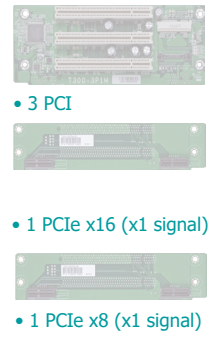


5 Riser Cards for DFI Proprietary Extension Bus

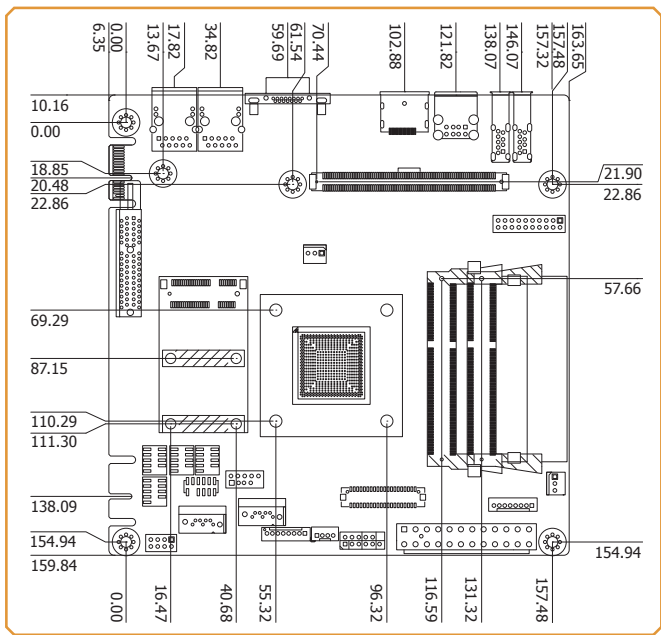
H Series:



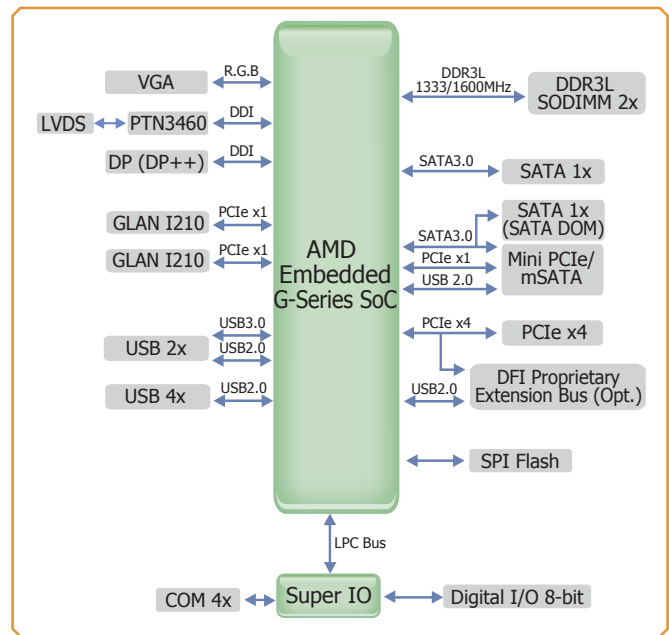
T Series:



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
KB160	-	N	- 420C
			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

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