

ARK-5280

Slot PC Board Expandable, Fanless Embedded Box Computer



Introduction

ARK-5280 is a powerful, robust and fanless Embedded Box Computer. The high performance ARK-5280 supports Socket 478 processors such as Intel Celeron M and Pentium M. This makes it highly suitable for embedded and industrial PC applications requiring high processor performance within a limited space. Featuring two PCI slots for application expansion and system integration, ARK-5280 Embedded Box Computer also carries four USB 2.0 and four serial port interfaces. It can support up to 2 GB of DDR SDRAM and has dual independent display support from the built-in CRT/VGA and DVI interfaces. Consequently, the ARK-5280 Embedded Box Computer has great flexibility within space critical environments. ARK-5280 is ideal for embedded system applications such as machine automation, industrial plants and cabinet integration.

Specifications

Processor System

- **Processor Support** Supports uFCPGA2, 478-pin embedded Intel Pentium M or Celeron M Processors, and supports up to Intel Pentium M processor 745 at 1.8 GHz
- **System Chipset** Intel 855 GME GMCH Graphics Memory Controller Hub (GMCH)
6300ESB I/O Controller Hub (ICH)
400 MHz FSB
- **BIOS** Award® 4 Mbit Flash BIOS
- **Second level cache** Celeron M processor: 512 KB or 1 MB
Pentium M processor 1 MB or 2 MB
- **DRAM** 2 x 200-pin SODIMM sockets
Supports ECC DDR200/266/333 SDRAM Up to 2 GB
- **Power Management** APM Rev. 1.2, ACPI Supported

Display

- **Display Controller** Intel 855 GME integrated graphics utilizing Intel Extreme technology
- **Display Memory** Dynamic video memory allocation up to 64 MB
- **Display Interface** CRT Interface
DVI interface, compliant with DVI specification 1.0
Optional LVDS Interface
- **Resolution** Up to 2048 x 1536 @ 24 bpp (75 Hz)

Ethernet

- **Ethernet Interface** Intel 82551ER 10/100Base-Tx Fast Ethernet Controller
Support 1 x RJ45 connector on the front metal faceplate

Features

- Extremely compact, sealed construction with fanless operation, supports Intel® Pentium® M and Celeron® M up to 1.8 GHz
- Dual Independent display supported by built-in system digital DVI and analog VGA/CRT interfaces
- 2 PCI slots for PC board expansion
- Rubber anti-vibration card-holder for PC expansion boards
- Anti-vibration HDD-bay to ensure maximum reliability
- ATX and wide range of input voltages supported: 9 ~ 32 V DC
- Simple, modularized user-friendly design for quick installation, convenient expansion and easy maintenance

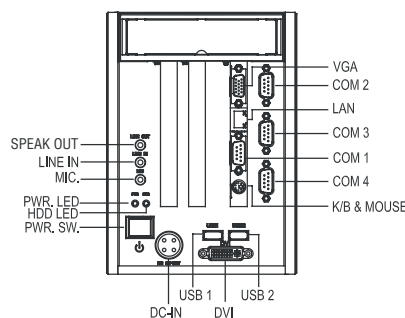
Audio

- **Audio Interface** Audio controller on the ICH4 chip.
Realtek® ALC 202 AC97 Codec
AC'97 stereo sound, Dual 2.2 W Amplifier
Supports Line-in, Speaker-out, Mic-in connectors on the front faceplate

Others

- **Watchdog timer** 255-level timer interval, setup by software
- **Keyboard/Mouse** 1 x Mini-Din connector support PS/2 Keyboard and PS/2 Mouse
- **Serial Ports** 4 x serial ports
COM2: RS-232/422/485 by a DB9 connector on front faceplate
COM1, COM3 and COM4: 3 x RS-232 by 3 x DB9 connectors on front faceplate
- **USB** Built-in 2 x USB 2.0 ports
Optional USB cable bracket to support 2 x USB 2.0 ports

Front Panel External I/O Mechanical Layout/Drawing



- **SSD** 1 x Compact Flash Card Type I/II
- **HDD** 1 x drive bay for 2.5-inch HDD

- **Expansion Slots** Built-in 2 x PCI Expansion Slots
Supports a maximum length of 186mm for PCB Board expansion

- **Front Panel**
 - External I/O port**
 - 1 x Power On/Off Button
 - 1 x 4-pole, DC DIN jack power input connector
 - 2 x USB Ports
 - 1 x DVI Port
 - 1 x DB-15 VGA/CRT Port
 - 1 x RJ-45 10/100Base-T Fast Ethernet Port
 - 1 x DB-9 as COM2 for RS-232/422/485*
 - *Note: The default setting of COM2 is RS-232.
 - The RS-422/485 mode of COM2 can be supported by replacing the internal cable and adjusting the jumper (JP1) inside the system
 - 3 x RS-232 COM Ports as COM1, COM3 and COM4
 - 1 x PS2 port, support PS2 keyboard/Mouse
 - Speak-Out, Line-in and Mic-in connector

- **Output Rating** DC 120 W
- **Input Voltage** 9 V_{DC} ~ 32 V_{DC},
Supports Power Input Over Voltage (32V) protection
Supports Maximum Power Input:
9 V_{DC}/14 A @ 126 W
12 V_{DC}/10 A @ 120 W
16 V_{DC}/8 A @ 128 W
19 V_{DC}/6.5 A @ 124 W
24 V_{DC}/5 A @ 120 W
32 V_{DC} @ 3 A @ 100 W
- **Fuse Rating** DC 15 A/63 V

- **Construction** Aluminum housing, Pantone Silver Color
- **Dimensions (W x H x D)** 137 x 189 x 221 mm
- **Weight** 5 kg

- **Software** OS support: Windows 2000, Windows XP, and Windows XP Embedded

- **Operating Temperature**
 - When system is equipped with 2.5-inch HDD without PC Expansion Boards: 0 ~ 45° C
 - When system is equipped with Industrial Grade Compact Flash Disk without PC Expansion Boards: -20 ~ 55° C
- **Relative Humidity**
 - 95% @ 40° C (non-condensing)
- **Vibration During Operation**
 - When system is equipped with 2.5-inch HDD: 1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 Oct./min, 1 hr/axis
 - When system is equipped with Compact Flash Disk: 5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 Oct./min, 1 hr/axis
- **Shock During Operation**
 - When system is equipped with 2.5-inch HDD: 20 G, IEC 60068-2-27, half sine, 11ms duration
 - When system is equipped with Compact Flash disk only: 50 G, IEC 60068-2-27, half sine, 11ms duration

- ## Packing List

- **1 x ARK-5280 Unit**
 - **1 x PS2 Keyboard/Mouse Cable** (P/N: 1700060202)
 - **1 x Utility CD**
 - **1 x Rear Mounting Bracket** (P/N: 1960004453)
 - **2 x Bottom Mounting Brackets** (P/N: 1960004454)
- Note: 1 of 2 Bottom mounting brackets is designed for both table and wall mount
- **1 x Power Cable, DIN-Jack to DC-Plug** (P/N: 1700001861)
 - **1 x Flat cable for RS-485/422 mode of COM2** (P/N: 1700001967)

- **ARK-5280-1S3A1E** Celeron M 1.3 GHz Embedded Box Computer, with VGA/DVI, Fast Ethernet, 2 x USB, 4 x COM, AC97 Audio, 512 MB DDR SDRAM, 40 GB HDD
- **ARK-5280-1S6A1E** Pentium M 1.6 GHz Embedded Box Computer, with VGA/DVI, Fast Ethernet, 2 x USB, 4 x COM, AC97 Audio, 512 MB DDR SDRAM, 40 GB HDD

External AC-to-DC Adapter and Power Cable

- **1757000224** AC-to-DC ADAPTER 4P DC19 V/7.89 A 150 W (ARK-5280)
- **9689071001** Power cord 3P 180 cm USA type
- **170203183C** Power cable 3P 183 cm Europe type
- **1700001934** Dual-USB cable bracket for ARK-5280
- **1700002224** Flat Cable LVDS & USB Port Bracket for ARK-5280
- **1700002223** Flat Cable Printer Port Bracket for ARK-5280

- **2070000606** XPE SP2 OS Image and License for ARK-5280, English Version (440 MB)
- **2070001117** XPE with Feature Pack 2007 OS Image and License for ARK-5280 English Version (600MB)

Unit: mm

Benefit

Fanless, High Performance Computing

- Fanless operation in sealed construction using low thermal emission processors
- Supports Socket 478 Embedded Intel Pentium M and Celeron M processors up to 1.8 GHz

Compact, Extremely Robust Construction

- Robust sealed aluminum cast construction using a modularized design to offer maximum space efficiency
- Rubber anti-vibration card-holder for PC expansion boards and anti-vibration HDD-bay to ensure maximum reliability

Highly Optimized Integration

- Simple, modular service-friendly design
- Quick installation, convenient expansion and easy maintenance
- Systems are supplied "Ready-to-Run"
- The wide input voltage range of 9 ~ 32 V DC with ATX support offers flexibility in automation environments
- Long life cycle support for product continuity to secure investment

Applications

- CNC Control
- Machine Cabinets Control
- Industrial Automation
- Transportation/vehicle control

Application Example

