

ARK-5280

**Fanless, PC Board Expandable,
Embedded Box Computer**



Introduction

ARK-5280 is a powerful, robust and fanless Embedded Box Computer. The high performance ARK-5280 Embedded Box Computer is equipped with socket 479 that supports Intel Celeron-M and Pentium-M processors, which is 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 communication I/O interfaces. It can support up to 2 GB DDR SDRAM of main memory and has dual independent display support from the built-in CRT/VGA and DVI interfaces that gives ARK-5280 Embedded Box Computer great flexibility within space critical environments. ARK-5280 is ideal for embedded system applications such as machine automation, and industrial plant 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 shared memory architecture, 400 MHz FSB
Award® 4 Mbit Flash BIOS
- **BIOS**
- **Second level cache** Celeron M processor: 512 KB or 1 MB
Pentium M processor 1 MB or 2 MB
- **DRAM** Two 200-pin SODIMM sockets,
Support 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 Graphics 2 technology
- **Display Memory** Optimized Shared Memory Architecture, supports up to 64 MB frame buffer using system memory
- **Display Interface** CRT Interface
DVI interface, compliant with DVI specification 1.0
Optional Support to LVDS Interface
- **Resolution** Up to 2048 x 1536 @ 24 bpp (75 Hz)

Ethernet

- **Ethernet Interface** Intel 82551ER 10/100Base-Tx Fast Ethernet controller supports one 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 to ensure maximum reliability
- ATX, and wide-range of DC Power Input support: DC 9 V ~ 32 V
- Simple, modularized user-friendly design for quick installation, expansion and easy maintenance

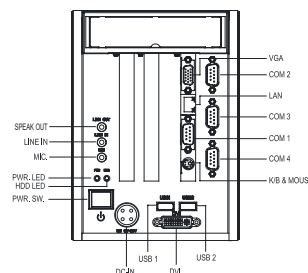
Audio

- **Audio Interface** Audio controller on the ICH4 chip.
Realtek® ALC 202 AC97 Codec
AC97 3D surround stereo sound, Dual 2.2 W Amplifier
Supports Line-in, Line-out, Mic-in connectors on the front faceplate

Others

- **Watchdog Timer** 255 levels timer interval, setup by software
- **Keyboard/Mouse** One mini-din connector supports PS/2 keyboard and PS/2 mouse
- **Serial Ports** Four serial ports
COM2: RS-232/422/485 by a DB9 connector on front faceplate
COM1, COM3 and COM4: three RS-232 by three DB9 connectors on front faceplate
- **USB** Built-in two USB 2.0 ports
Optional USB Cable-Bracket to support two additional USB 2.0 ports

Front Panel External I/O Mechanical Layout/Drawing



Storage

- **SSD** Supports one Compact Flash card type I/II
- **HDD** Supports one drive bay for 2.5-inch HDD

PC Board Expansion

- **Expansion Slots** Two built-in PCI expansion slots
Supports maximum length of 186mm of PCB boards expansion

System External I/O on chassis

- **Front Panel** 1 x Power On/Off button
- **External I/O port** 1 x 4-pole, DC DIN-Jack of power Input connector
2 x USB ports
1 x DVI port
1 x DB-15 VGA port
1 x RJ-45 0/100BaseT 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 via replacing the internal cable and adjusting the jumper (JP1) inside the system
3 x RS-232 COM Port as COM1, COM3 and COM4
1 x Mini-din as PS/2 keyboard
Speak_Out, Line-in and Mic-in connector

Internal DC-to-DC Power Supply Unit

- **Output Rating** DC 120 W
- **Input Voltage** 9 VDC ~ 32 VDC,
Supports power input over voltage (32V) protection
Supports maximum power input:
9 VDC/14 A @ 126 W
12 VDC/10 A @ 120 W
16 VDC/8 A @ 128 W
19 VDC/6.5 A @ 124 W
24 VDC/5 A @ 120 W
32 VDC @ 3 A @ 100 W
- **Fuse Rating** DC 15 A/63 V

Mechanical

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

Software Compatibility

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

Environmental Specification

- **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 Loading During Operation** When system is equipped with 2.5-inch HDD: 1 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 10 ct./min, 1 hr/axis
When system is equipped with industrial grade Compact Flash disk: 5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 10 ct./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 industrial grade Compact Flash disk: 50 G, IEC 60068-2-27, half sine, 11ms duration
- **Safety** UL
- **EMC** CE/FCC

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: 1960004454)
- **2 x Bottom Mounting Brackets** (P/N: 1960004453)
Note: 1 of 2 bottom mounting brackets is made for common usage for both table and wall mount
- **1 x Power Cable, DIN-Jack to DC-Plug** (P/N: 1700001861)
- **1 x Flat Cable support RS-485/RS-422 mode for COM2 serial port** (P/N: 1700001967)

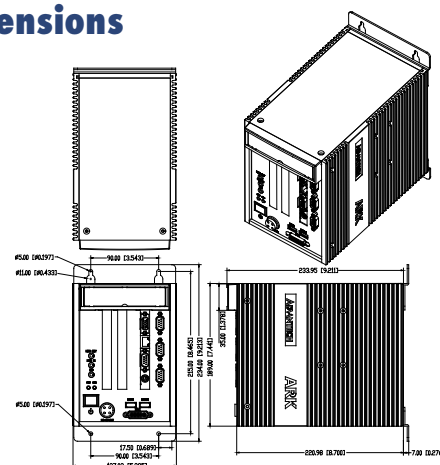
Ordering Information

- **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

Optional Items

- **2070000606** XPE SP2 OS image and license for ARK-5280, English version (440 MB)
- **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 European 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

Dimensions



Unit: mm (inch)

Benefit

Fanless Power Computing Performance

- Fanless operation in sealed construction utilizing low thermal emission processors
- Supports Socket 479 type Intel Pentium M and Celeron M processors

Compact, Extremely Robust Construction

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

Highly Optimized Integration

- Simple and modularized service-friendly design
- Quick installation, easy expansion and maintenance
- Systems are supplied "Ready-to-Run"
- Access wide-range of DC 9 V ~ 32 V power input source with ATX support; offers flexibility for various automation environments
- Long life cycle support for product continuity to secure investment

Applications

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

Application Examples

