

# MI/O 单板电脑



贵州省特种计算机服务中心  
服务热线：15185124267

**MI/O** Extension

弹性设计其实可以更简单

- ／ MI/O Extension 嵌入式单板电脑
- ／ MI/O Extension 扩展卡
- ／ MI/O 评估开发套件

Product Brochure Vol.2016.1



## MI/O Extension 单板电脑 具有MIOe扩展接口的嵌入式单板电脑

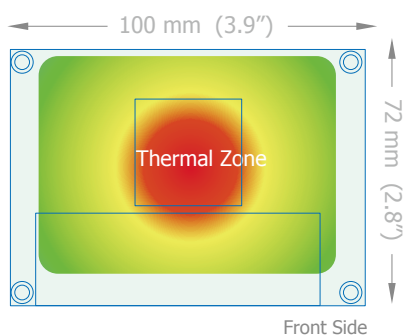
研华创新型MI/O（多I/O）Extension单板电脑战略上定位于单板电脑（SBC）和模块化电脑（COM）之间的细分市场。MI/O Extension SBC配有灵活的多I/O接口，可提高开发效率、节约开发资源，并可为系统集成商提供经济高效的优化解决方案，同时还可保障其关键垂直产业领域的专业技术。

通过高速插槽连接MI/O Extension模块后，客户即可拥有可为客户提供更多灵活的I/O选择，从而满足垂直应用的各种需求。MI/O Extension接口(MIOe)适应接口扩展需求和未来技术发展趋势，目前支持以下接口：DisplayPort 显示端口、PCIe x1\*、LPC、SMBus、USB 2.0/USB 3.0、音频线路输出和电源接口。

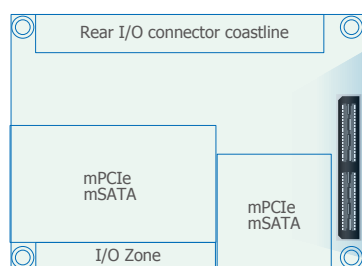
MI/O Extension的设计充分考虑到软件、硬件和固件扩展和升级。除了提供MIOe模块设计文档供客户参考，研华还提供评估板用于MIOe接口验证和测试。研华一直竭力帮助系统集成商开发经济高效、以市场为导向的灵活解决方案，以帮助其迅速抢占商机。

\*不同平台的规格不同，最多可达4对。

### 2.5" MI/O-Ultra (Pico-ITX) SBCs



Front Side



Back Side

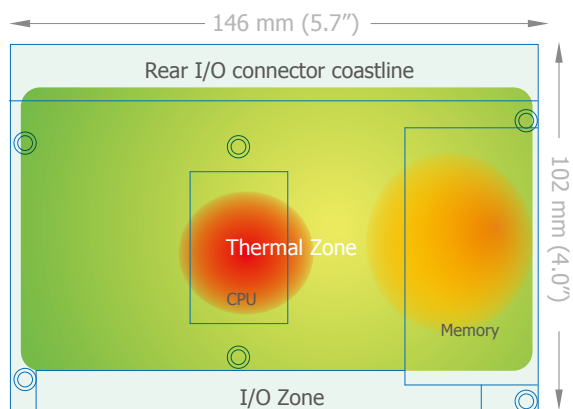
### MIOe 引脚定义

- DisplayPort
- 4 PCIe x1
- USB 3.0
- USB 2.0
- LPC
- HD Audio 输出
- SMBus
- +12V/ +5V Power

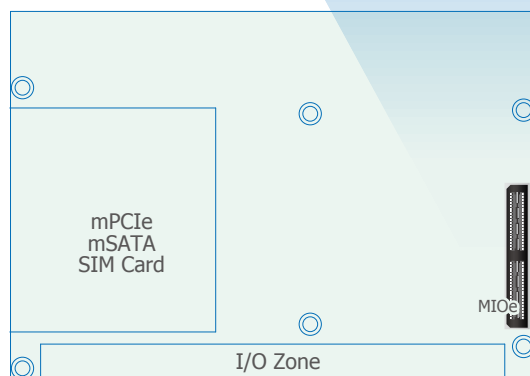
- Core TDP :低于8 W
- 超低功耗

- 超小尺寸（与2.5"硬盘或PICO-ITX尺寸相同）
- 带有简易I/O，有价格优势

### 3.5" MI/O-Compact SBCs



Front Side



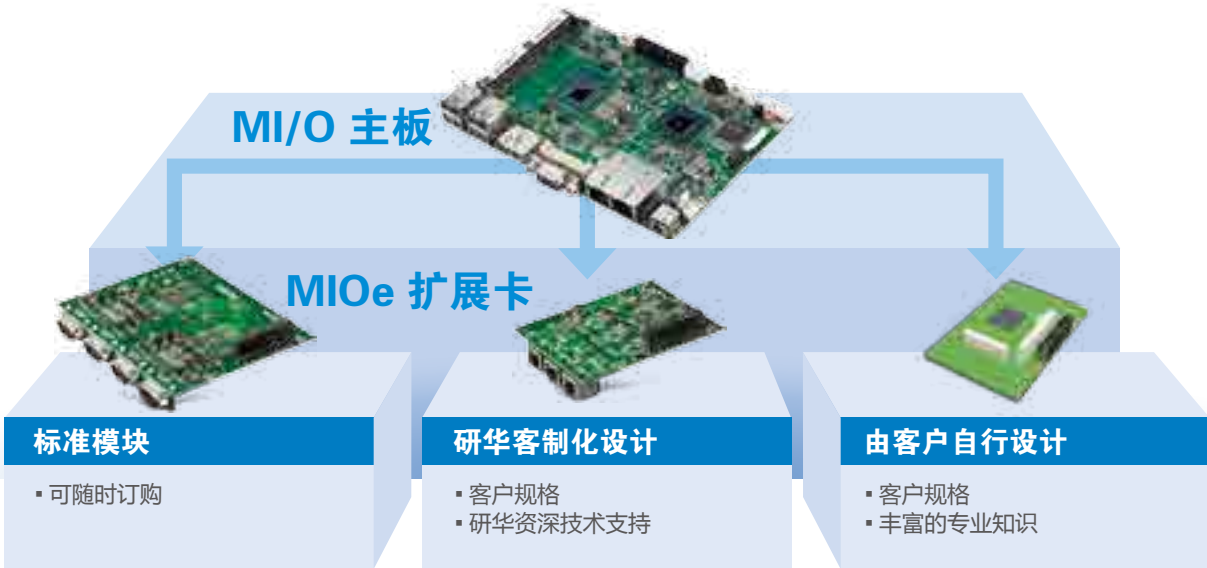
Back Side

- Core TDP: 9 W - 40 W
- 丰富的I/O
- 尺寸紧凑，与3.5" HDD相同

- 支持扩展温度设计
- 支持iManager
- 中高端性能平台

## 灵活的服务模式 – 合作开发和自主开发MIOe 扩展卡

系统集成商可通过统一的MIOe接口插接MIOe扩展卡，从而扩展I/O 功能。研华还提供了一系列应用模块，系统集成商可参考研华网站上的MI/O extention模块的设计指南自己设计、开发应用。我们也为客户提高了合作开发工作模式。客户可以选择“由研华进行设计”或者“由客户自行设计”。



### MIOe非标扩展卡开发过程

合作开发模式，即“MIOe合作开发支持”须遵守研华的项目开发流程。如果客户选择自主开发模式，研华可在过程中针对多个检查点协助进行进程评审。两种工作模式都要求做到以下检查点：

**项目初始**

研华协助客户审核功能块图并评估合作开发和自主开发模式的优缺点。MI/O Extension规格、MIOe设计指南、评估板机械图等信息，都可供用户下载。具体请访问：<http://mio.advantech.com>

**研华客制化设计** 验证流程

**步骤1:项目咨询**

- 研华提交项目概念、功能块图、规格、排程以及报价。
- 客户认可

**步骤2: 方案设计**

- 研华提交设计方案

**步骤3:元器件位置设计**

- 研华2D/3D设计图
- 客户认可

**步骤4:布线设计**

- 研华提交布局布线

**步骤5:生产**

- 研华负责生产样品及组装

**步骤6:验证**

- 客户和研华FAE检验产品

**由客户自行设计** 验证流程

**步骤1:方案审核**

- 研华协助客户审核方案，确保其符合 MIOe设计指南的要求

**步骤2:元器件位置审核**

- 研华提供MIOe高度限制信息和3D文件供用户参考

**步骤3:布线审核**

- 研华提供PCB层叠结构和阻抗控制建议

**步骤4:生产**

- 客户负责生产样品及组装

**步骤5:验证**

- 客户在研华的帮助下检验产品

注：研华有权根据服务规模收取设计NRE费用。

## 主要特性

研华推出MI/O Extension产品以帮助系统集成商快速提供优化解决方案，并保留其在关键垂直行业的技术优势。



## MIOe统一接口

MI/O Extension具有统一MIOe接口，可支持附加扩展接口，从而为研华或客户的I/O模块设计提供更灵活的支持。MIOe支持5mm ~ 25mm等多种高度选择，因此能够满足不同模块的需求。

接口功能包括：

- 显示端口: HDMI、LVDS、DVI、CRT或eDP显示接口
- PCIe x1:GbE、USB 3.0、SATA/RAID、FPGA或PCI扩展
- USB 2.0/ 3.0：超高速存储、采集卡、HD Webcam & 显示接口
- LPC：传统总线& Multi-UART、PS2、GPIO、FDD、IR、超级I/O的并口
- 高清音频:线路输出，可灵活选择扩音器
- SMBus:GPIO控制、智能电池/充电器、W/R EEPROM
- 电源：MI/O Extension SBC配有电源

## MIOe接口具有如下特性

### 高速接地排针

- 支持多种高速协议
- 延长供货支持
- 10年混合气流试验（MFG）经验

### 多种高度选择

- 5、8、11、16、19、25mm高度组合，适合各种应用

### 丰富的库参考

- 电气3D模型、PCB库/占用空间
- 详细布局参考

## 统一的系统机械设计

MI/O Extension提供统一螺丝安装孔位、海岸线和I/O接口区，以便于系统集成、维护和升级。

- 统一螺丝安装孔位
- 统一海岸线I/O位置
- 统一的I/O接口区
- 统一MIOe接口位置和针脚定义







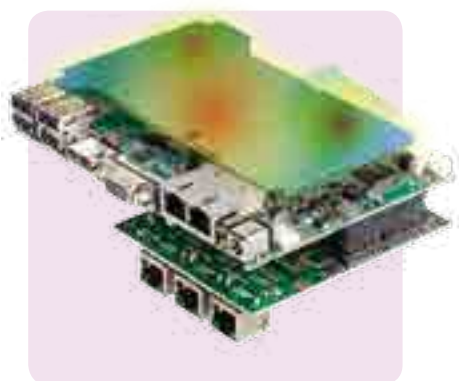
## 为什么选择MI/O Extension SBC进行嵌入式开发?

- 高度集成，节省多达20%的系统空间
- 灵活性高，便于以后I/O扩展和升级
- 支持设计文档和评估板
- 适用于系统集成商的省时经济型解决方案



## 特殊机械设计

- 高级散热设计
- 集成I/O
- 无接线设计



## 单面集中散热设计

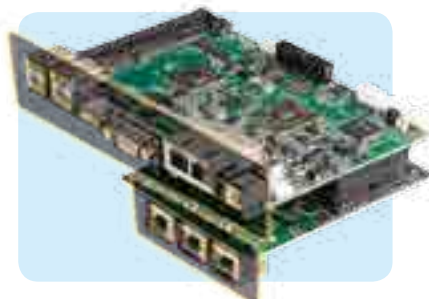
一般而言，热流都集中在嵌入式板卡的顶部和底部。研华MI/O Extension SBC采用集中散热设计，所有的热量都集中在顶部，通过散热片或导热片疏导热量的效果更好。

- 覆盖了CPU、南桥、内存、电源和主动IC
- 最大散热空间
- 集成导热片/散热片
- 简化系统设计
- 底部的热敏感部件可有效预防热问题

## 扩展模块的多样化

研华开发了一系列适合未来接口设计并能够满足多种垂直应用需求的模块。

- 显示模块：48-bit LVDS/显示接口/ USB2.0
- 通信模块：三路GbE，4-端口PoE
- 多I/O模块：多个COM端口，2端口CAN总线
- 评估板：可用于接口验证
- MIOe模块可保留客户的专业技术优势



## 简化线材设计

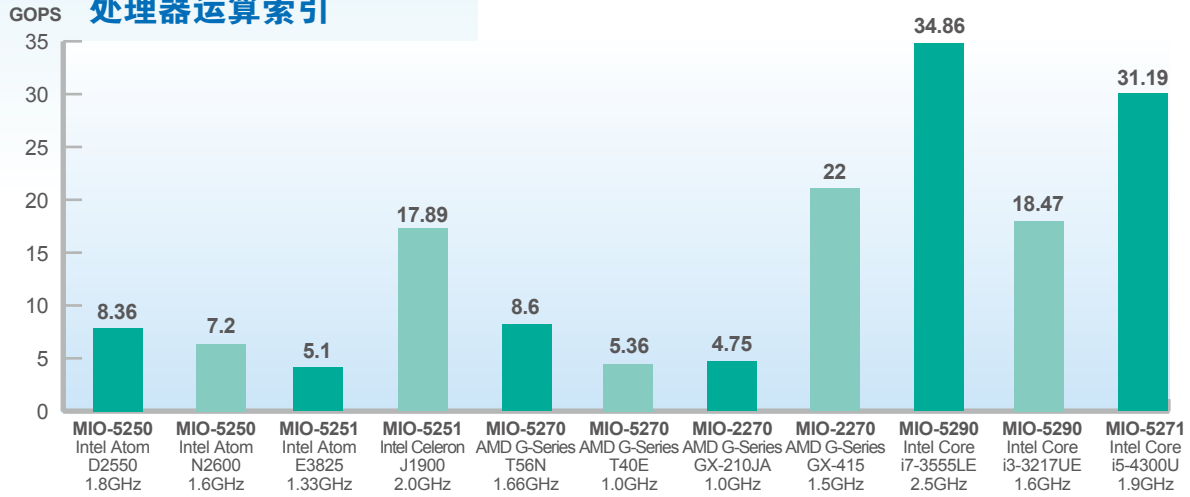
MI/O Extension单板电脑采用统一的I/O接口海岸线、Mini PCIe卡位置和内部I/O接口。这种统一的结构克服了未来升级集成中可能会遇到的一些问题。

- 底部简化线材和锁固接口设计
- 降低安装和人力成本以及部署复杂性
- 增强EMI/ESD保护和散热效果

# 性能标准

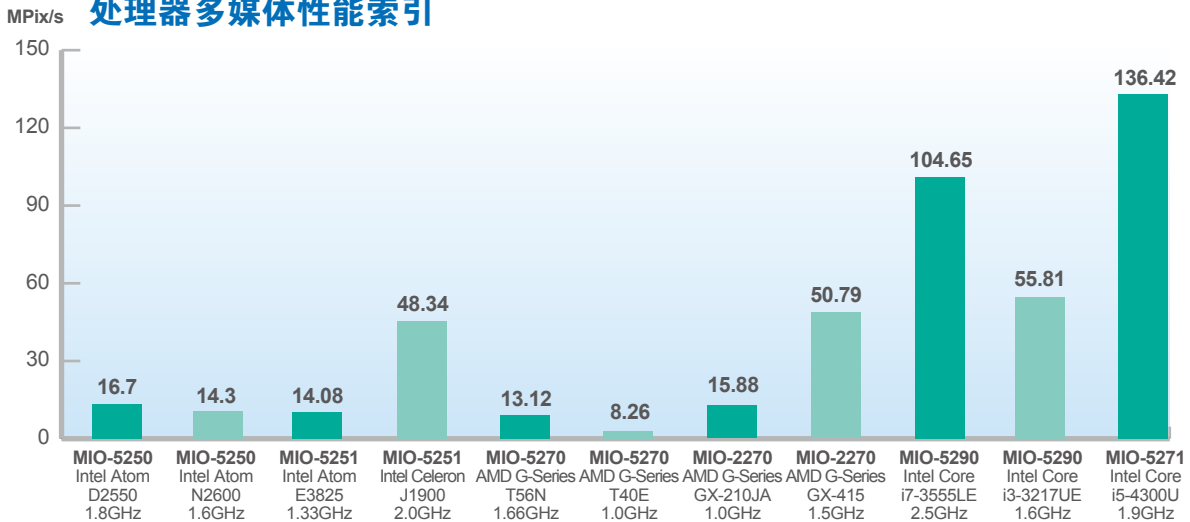
性能标准可指导客户根据其应用需求选择不同的平台。下面的结果说明了处理器本身运算性能、多媒体性能以及图形性能。

## 处理器运算索引



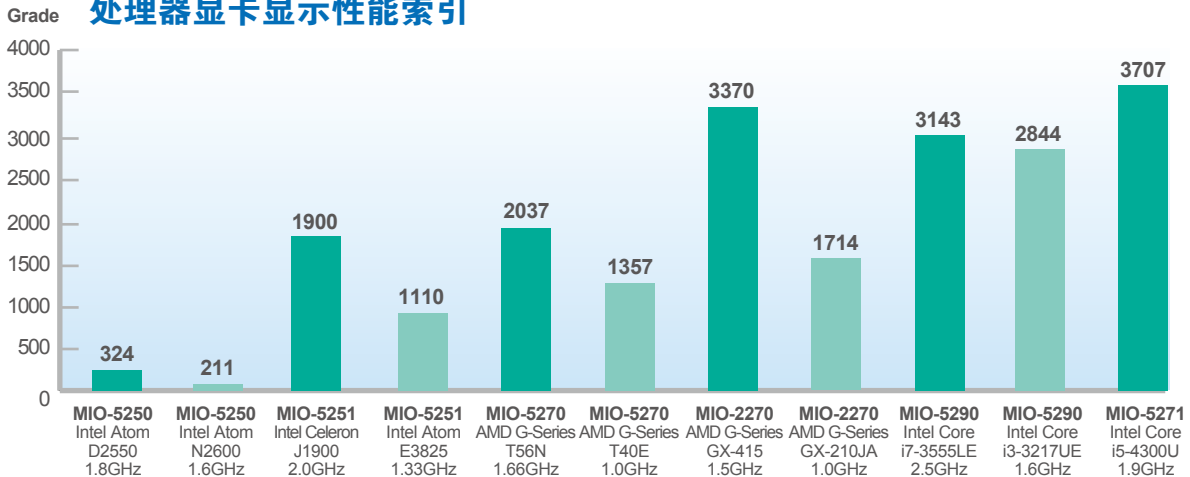
Tested by SiSoftware Sandra Lite 2013

## 处理器多媒体性能索引



Tested by SiSoftware Sandra Lite 2013

## 处理器显卡显示性能索引



Tested by 3DMark 2006 with 1920X1080 resolution

## MI/O Extension扩展卡 – 易于扩展、立即可用

MI/O Extension模块支持多种嵌入式单板电脑，为客户提供灵活I/O接口，满足各种垂直应用的需求。由于采用了统一的接口和螺丝孔位，所以MIOe扩展卡全部兼容MI/O SBC。

\*\* 研华为自行设计 MI/O Extension模块的客户提高了设计指南。

### 3.5" MI/O-Compact MIOe 模块

#### MIOe-210

- 多个COM端口  
(4x RS232/422/485, 2x RS422/485)

+ MIO-5250 MIO-5251 MIO-5270  
MIO-5290 MIO-5271

- 多达6x RS232/422/485, 4x RS422/485



#### MIOe-220

- Triple Intel® Gigabit Ethernet

+ MIO-5250 MIO-5251 MIO-5270  
MIO-5290 MIO-5271

- 多达5 x Intel Gigabit 以太网



#### MIOe-230

- 48-bit LVDS or DisplayPort, 2 x USB 2.0

+ MIO-5250 MIO-5251 MIO-5270  
MIO-5290 MIO-5271

- Up to 2 x LVDS, 8 x USB 2.0



#### MIOe-3680

- 2端口 CAN总线，带隔离保护

+ MIO-5250 MIO-5251 MIO-5270 MIO-5290 MIO-5271

- 2 x 附加CANBus



#### MIOe-3674

- 4端口10/100/1000 BaseT(X) 802.3af (PoE)

+ MIO-5250 MIO-5251 MIO-5270 MIO-5290 MIO-5271

- 4 x 附加 PoE



### 2.5" MI/O-Ultra (Pico-ITX) MIOe Modules

#### MIOe-110

- 2 x RS232, 2 x RS232/422/485, 2 x USB 2.0

+ MIO-2261 MIO-2263 MIO-2270

- 最高可达 4xRS232, 2xS232/422/485



#### MIOe-120

- 双 Intel® 千兆以太网/ Mini-PCIe (带 SIM卡槽) / HDMI\*/ 音频 (带放大器) / 2 x USB 2.0

+ MIO-2261 MIO-2263 MIO-2270

- 多达3 x Intel® 千兆以太网/ 2 x Mini-PCIe (带 SIM卡槽) / HDMI/ 音频 (带放大器)



\* HDMI可根据需求配置

## MI/O Extension评估板



#### MIOe-DB5000

- 适用于所有 MI/O SBC的评估板
- ATX标准螺丝孔 (244 x 170 mm)
- 数字显示接口
- 3 x PCIe x1/ USB 2.0/ USB 3.0
- 高清音频线路输出
- LPC/ SMBus/ GPIO
- PCIe Mini 卡、SIM 卡槽
- SATA, SATA 电源



#### MIOe-DB2000

- 适用于 MIO-2262的评估板
- 115 x 165 mm
- 1 x PCIe x1, 1 x 全长mini PCIe (带 SIM卡槽)
- 6 x USB 2.0
- 1 x DisplayPort/ HDMI (HDMI根据需求配置)
- 1 x RJ45 GbE



#### MIOe-DB2100

- 适用于MIO-2264的评估板
- 115 x 165 mm
- 1 x PCIe x1, 1x 全长 mini PCIe (带 SIM卡槽)
- 4 x USB 2.0, 1 x USB 3.0
- 1 x 显示 端口 或 HDMI
- 1 x RJ45 GbE

# 产品选型

## MI/O Extension 单板电脑



| 型号名           | MIO-5250  | MIO-5251  | MIO-5270  | MIO-5271  | MIO-5272   | MIO-5290   |
|---------------|---|---|---|---|--|--|
| <b>外形尺寸</b>   | MIO-Compact   | MIO-Compact   | MIO-Compact   | MIO-Compact   | MIO-Compact  | MIO-Compact  |
| <b>处理器系统</b>  | CPU: Intel Atom D2550/N2600<br>CPU TDP: 10W/3.5W<br>频率: 1.86 GHz /1.6 GHz<br>核数: 2<br>L2 Cache: 1 MB<br>L3 Cache: -<br>BIOS: AMI EFI 16Mbit<br>系统芯片组: Intel NM10  | CPU: Intel Atom E3845/E3825 & Celeron J1900<br>CPU TDP: 10W/ 6W/ 10W<br>频率: 1.91 GHz/ 1.33 GHz/ 2 GHz<br>核数: 4/ 2/ 4<br>L2 Cache: 2MB/ 1MB/ 2MB<br>L3 Cache: -<br>BIOS: AMI UEFI 64Mbit<br>系统芯片组: Intel Atom SoC  | CPU: AMD G-Series T56N/T40E/T40R<br>CPU TDP: 18 W/6.4 W/5.5 W<br>频率: 1.65 GHz/1.0 GHz/1.0 GHz<br>核数: 2/ 2/ 1<br>L2 Cache: 1 MB/512 KB (T40E & T40R)<br>L3 Cache: -<br>BIOS: AMI EFI 32Mbit<br>系统芯片组: AMD A50M   | CPU: Intel Core i5-4300U, Celeron 2980U<br>CPU TDP: 15W<br>频率: 1.9 GHz/1.6 GHz<br>核数: 2<br>L2 Cache: 3MB / 2MB<br>L3 Cache: -<br>BIOS: AMI UEFI 128 Mb<br>系统芯片组: Integrated Intel 8 Series  | CPU: Intel Core i5-6300U, i3-6100U, Celeron 3955U<br>CPU TDP: 15W<br>频率: 2.4GHz/2.3GHz/2.0GHz<br>核数: 2<br>L2 Cache: 3MB/3MB/2MB<br>L3 Cache: -<br>BIOS: AMI UEFI 128Mb<br>系统芯片组: Intel Skylake(U) SoC  | CPU: Intel Core i7-3555LE/i7-3517UE/i3-3217UE, Celeron 1047UE<br>CPU TDP: 25 W/17 W<br>频率: 2.5 GHz/1.7 GHz/1.6 GHz/1.4 GHz<br>核数: 2<br>L2 Cache: -<br>L3 Cache: -<br>BIOS: AMI UEFI 64Mbit<br>系统芯片组: Intel QM77  |
| <b>内存</b>     | DDR3 1066 MHz/DDR3 800MHz<br>最大容量: 4 GB<br>插槽: 1 x 204-pin SODIMM   | DDR3L 1066/1333MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM  | DDR3 1066 MHz/1333MHz (T56N)<br>最大容量: 4 GB<br>插槽: 1 x 204-pin SODIMM  | DDR3L 1333/1600 MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM   | DDR3L 1600MHz<br>最大容量: 16GB<br>插槽: 2x204-pin SODIMM  | DDR3 1600MHz, DDR3L 1333 MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM   |
| <b>显示</b>     | 控制器: Integrated Intel GMA 3600 series<br>图形引擎: DirectX® 9 and OpenGL3.0 support<br>HW Accelerated Decode: MPEG2, H.264, VC-1<br>显存: Share with system memory up to 256 MB<br>VGA: Up to 1920 x 1200 at 60 Hz<br>LCD (LVDS/eDP): 18/24-bit LVDS1: up to 1366 x 768 (N2600), 1440 x 900 (D2550) at 60 Hz<br>48-bit LVDS2: 2560 x 1600 at 60 Hz (D2550)<br>DDI (HDMI/DVI/DisplayPort): HDMI: up to 1920 x 1200 at 60Hz (Optional)<br>Multiple Display: VGA+LVDS, VGA+HDMI, HDMI+LVDS | 控制器: Intel Gen7 graphic engine<br>图形引擎: DirectX11, OpenGL3.2, OpenCL 1.1<br>Full HW acceleration, decode: H.264, MPEG2/4, VC-1, WMV9, Encode: H.264, MPEG2<br>显存: Share with system memory up to 384 MB<br>VGA: Up to UXGA 1600 x 1200 at 60Hz<br>LCD (LVDS/eDP): 48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz<br>eDP up to 2560 x 1600 at 60Hz (Optional)<br>DDI (HDMI/DVI/DisplayPort): HDMI: 1920 x 1080 at 60Hz<br>DP: up to 2560 x 1600 at 60Hz (Optional)<br>Multiple Display: VGA+LVDS/eDP, VGA+HDMI/DP, LVDS/eDP+HDMI/DP | 控制器: AMD Radeon™ HD 6250<br>图形引擎: DirectX® 11 and OpenGL 4.1 technologies support, 2D Acceleration, 3D Acceleration, Motion Video Acceleration, Supports DVD, Blu-ray™; Hardware Decode (UVD 3): H.264, VC-1 & MPEG2<br>显存: Share with system memory up to 384MB<br>VGA: Up to 2560 x 1600 / Up to 1920 x 1200 at 60Hz (T40E&T40R)<br>LCD (LVDS/eDP): LVDS 48-bit, up to 1920 x 1200 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): HDMI: up to 1920 x 1080 at 60Hz & 366pp<br>Multiple Display: VGA+LVDS, VGA+HDMI, HDMI+LVDS | 控制器: Intel® HD Graphics 4400 / Intel HD Graphics (Celeron)<br>图形引擎: DirectX11.1, OpenGL 4.0, and OpenCL 1.3<br>Full AVC/VC1/MPEG2 HW Decode<br>显存: Share with system memory up to 1792MB<br>VGA: Up to 1920 x 1200 at 60 Hz<br>LCD (LVDS/eDP): LVDS 48-bit, up to 1920 x 1200 at 60Hz<br>DDI (HDMI/DVI/DisplayPort): DisplayPort: up to 3200 x 2000 at 60 Hz<br>HDMI: up to 4096 x 2304 at 24 Hz<br>Multiple Display: VGA+LVDS, VGA+HDMI/DP, HDMI/DP+LVDS, VGA+HDMI/DP+LVDS | 控制器: Intel HD Graphics 520 / Intel HD Graphics 510 (Celeron)<br>图形引擎: DirectX11.3, OpenGL 4.3, and OpenCL 2.0 Full AVC/VC1/MPEG2 HW Decode<br>显存: Share with system memory up to 1792MB<br>VGA: Up to 1920 x 1200 at 60 Hz<br>LCD (LVDS/eDP): LVDS with 3.3V, 5V and 12V on LCD VDD power, 5V and 12V support on LVDS inverter , Dual channel 24-bit LVDS, max resolution up to 1920 x 1200 at 60Hz (eDP*) Max resolution up to 4096 x 2304 at 60 Hz )<br>DDI (HDMI/DVI/DisplayPort): Supports HDMI 1.4 for HD Video playback Max resolution up to 4096 x 2160 at 24 Hz<br>Multiple Display: VGA + HDMI, VGA + LVDS/eDP*, HDMI + LVDS/eDP*, VGA + HDMI + LVDS/eDP* | 控制器: Intel® HD Graphics 4000 / Intel® HD Graphics (Celeron)<br>图形引擎: DirectX11, OpenGL 3.1, and OpenCL 1.1<br>Hardware decode acceleration: AVC/H.264, MPEG-2, VC-1<br>显存: Share with system memory up to 1792MB<br>VGA: Up to 2048 x 1536 at 75Hz<br>LCD (LVDS/eDP): LVDS 48-bit, up to 2560 x 1600 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): HDMI: up to 1920 x 1200 at 60Hz<br>Displayport: up to 2560 x 1600 at 60Hz<br>Multiple Display: VGA+LVDS, VGA+HDMI/DP, VGA+LVDS + DP (coastline) + DP (MIOe) |
| <b>扩展接口</b>   | Mini PCIe: 1 x Full-size<br>SIM Socket: 1<br>SMBus: 1<br>iFC: 1 (Shares with SMBus pin)<br>MIOe: SMBus, 3 x USB2.0, LPC, 1 x PCIe, line out, DisplayPort (optional), Reset, PowerOn, +5Vsb, +12Vsb  | Mini PCIe: 1 x Full-size<br>SIM Socket: 1<br>SMBus: 1<br>iFC: 1 (Shares with SMBus pin)<br>MIOe: SMBus, 3xUSB2.0, LPC, 1 x PCIe, line-out, DisplayPort (optional), Reset, PowerOn, +5Vsb, +12Vsb  | Mini PCIe: 1 x Full-size<br>SIM Socket: -<br>SMBus: 1<br>iFC: 1 (Shares with SMBus pin)<br>MIOe: SMBus, 3 x USB2.0, LPC, 4 x PCIe, line-out, Displayport (optional), Reset, PowerOn, +5Vsb, +12Vsb  | Mini PCIe: 1 x Full-size Mini PCIe, 1 x Half-size Mini PCIe<br>SIM Socket: 1<br>SMBus: 1<br>iFC: 1 (Shares with SMBus pin)<br>MIOe: SMBus, 3 x USB2.0, LPC, 1 x PCIe, line out, Displayport (optional), Reset, PowerOn, +5Vsb, +12Vsb   | Mini PCIe: 2xFull-size<br>SIM Socket: 1<br>SMBus: 1<br>iFC: 1 (Shares with SMBus pin)<br>MIOe: Displayport*, SMBus, USB3.0, LPC, 2 x PCIe x1, line out, +5 Vsb/+12 Vsb power, Power On, Reset  | Mini PCIe: 1 x Full-size, 1 x Half-size<br>SIM Socket: -<br>SMBus: 1<br>iFC: 1 (Shares with SMBus pin)<br>MIOe: Displayport, SMBus, 1 x USB2.0, 1 x USB3.0, LPC, 4 x PCIe x1, line out, Reset, PowerOn, +5Vsb, +12Vsb  |
| <b>以太网</b>    | 控制器: GbE1 & GbE2: Intel 82583V<br>速度: 10/ 100/ 1000 Mbps<br>连接器: RJ45 x 2   | 控制器: GbE1 & GbE2: Intel i210<br>速度: 10/100/1000 Mbps<br>连接器: RJ45 x 2   | 控制器: GbE1 & GbE2: Realtek RTL8111E-VB-GR<br>速度: 10/ 100/ 1000 Mbps<br>连接器: RJ45 x 2   | 控制器: GbE1: Intel i218, GbE2: Intel i210<br>速度: 10/ 100/ 1000 Mbps<br>连接器: RJ45 x 2  | 控制器: GbE1: Intel i219, GbE2: Intel i210<br>速度: 10/ 100/ 1000 Mbps<br>连接器: RJ45 x 2   | 控制器: GbE1: Intel 82579LM, GbE2: Intel 82583V<br>速度: 10/ 100/ 1000 Mbps<br>连接器: RJ45 x 2  |
| <b>音频</b>     | 音频接口: High Definition Audio<br>CODEC: Realtek ALC892<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out, Mic-in  | 音频接口: High Definition Audio<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line-out, Mic-in   | 音频接口: High Definition Audio<br>CODEC: Realtek ALC892<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out, Mic-in  | 音频接口: High Definition Audio<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line-out, Mic-in   | 音频接口: High Definition Audio (HD)<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out, Mic-in   | 音频接口: High Definition Audio<br>CODEC: Realtek ALC892<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out, Mic-in   |
| <b>看门狗定时器</b> | 255 levels timer interval   | 255 levels timer interval   | 255 levels timer interval   | 255 levels timer interval   | 255 levels timer interval  |  |
| <b>存储</b>     | SATA: 1, up to 3Gb/s (300 MB/s)<br>mSATA: Supports either mSATA or full size miniPCIe, default support miniPCIe<br>CFast: 1<br>USB3.0: -<br>USB2.0: 6 (4 from Rear, 2 from Internal)<br>GPIO: 8-bit general purpose input/output  | SATA: 1, up to 3Gb/s (300MB/s)<br>mSATA: 1 x Full-size<br>CFast: -<br>USB3.0: 1<br>USB2.0: 3 (3 from rear, 1 from internal)<br>GPIO: 8-bit general purpose input/output   | SATA: 2, up to 3Gb/s (300 MB/s)<br>mSATA: Supports either mSATA or full size miniPCIe, default support miniPCIe<br>CFast: 1<br>USB3.0: -<br>USB2.0: 6 (4 from Rear, 2 from Internal)<br>GPIO: 8-bit general purpose input/output  | SATA: 2, up to 6 Gb/s (600 MB/s)<br>mSATA: Supports either mSATA or full size miniPCIe<br>CFast: -<br>USB3.0: 2<br>USB2.0: 3 (2 from rear, 1 from internal)<br>GPIO: 8-bit general purpose input/output   | SATA: 2, up to 6.0 Gb/s (600 MB/s)<br>mSATA: 1 x Full-size<br>CFast: -<br>USB3.0: 2<br>USB2.0: 4 (2 from Rear, 2 from Internal)<br>GPIO: 8-bit general purpose input/output  | SATA: 2, up to 6.0 Gb/s (600 MB/s)<br>mSATA: Supports either mSATA or full size miniPCIe<br>CFast: -<br>USB3.0: 2<br>USB2.0: 4 (2 from Rear, 2 from Internal)<br>GPIO: 8-bit general purpose input/output  |
| <b>I/O</b>    | COM Port: 2 x RS-232, 2 x RS-232/422/485 with RS-485 auto flow control<br>复位按钮: 1<br>智能风扇: -  | COM Port: 2xRS-232, 2xRS-232/422/485 with RS-485 auto flow control<br>复位按钮: 1<br>智能风扇: -  | COM Port: 1 x RS-232, 2 x RS-232/422/485 with RS-485 auto flow control<br>复位按钮: 1<br>智能风扇: 1 (T56N only)  | COM Port: 2 x RS-232, 2 x RS-232/422/485 with RS-485 auto flow control<br>复位按钮: 1<br>智能风扇: -  | COM Port: 2xRS-232/422/485<br>复位按钮: 1<br>智能风扇: -   | COM Port: 1 x RS-232, 1 x RS-232/422/485 with RS-485 auto flow control<br>复位按钮: 1<br>智能风扇: 1   |
| <b>电源</b>     | 电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ±10%<br>连接器: ATX 2x2P / DC Jack<br>功耗 (Idle): N2600: 0.606 A @ 12 V (7.27 W)<br>D2550: 0.829 A @ 12 V (9.95 W)<br>功耗 (最大, HCT下测试): N2600: 0.729 A @ 12 V (8.75 W)<br>D2550: 1.029 A @ 12 V (12.35 W)<br>电池: Lithium 3 V / 210 mAh   | 电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ±10%<br>连接器: ATX 2x2P (DC Jack optional)<br>功耗 (Idle): MIO-5251J: 0.62A @ 12V (7.44W)<br>MIO-5251E: 0.42A @ 12V (5.04W)<br>功耗 (最大, HCT下测试): MIO-5251J: 1.16A @ 12V (13.92W)<br>MIO-5251E: 0.81A @ 12V (9.72W)<br>电池: Lithium 3 V / 210 mA   | 电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ±10%<br>连接器: ATX 2x2p / DC Jack<br>功耗 (最大, HCT下测试): Refer to product page<br>电池: Lithium 3 V / 210 mAh  | 电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ±10%<br>连接器: ATX 2x2P / DC Jack<br>功耗 (最大, HCT下测试): Refer to product page<br>电池: Lithium 3 V / 210 mA   | 电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ±10%<br>连接器: ATX 2x2P (DC Jack optional)<br>功耗 (最大, HCT下测试): TBD<br>电池: Lithium 3 V / 210 mAh  | 电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ±10%<br>连接器: ATX 2x2P / DC Jack<br>功耗 (最大, HCT下测试): Refer to product page.<br>电池: Lithium 3 V / 210 mAh  |
| <b>环境</b>     | 工作: 0 ~ 60° C (32 ~ 140° F)<br>(Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing   | 工作: 0 ~ 60° C (32 ~ 140° F)<br>(Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40 ~ 85° C and 60° C @ 95% RH Non-Condensing  | 工作: 0 ~ 60° C (32 ~ 140° F)<br>(Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing   | 工作: 0 ~ 60° C (32 ~ 140° F)<br>(Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40 ~ 85° C and 60° C @ 95% RH Non-Condensing  | 工作: 0 ~ 60° C (32 ~ 140° F)<br>(Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  | 工作: 0 ~ 60° C (32 ~ 140° F)<br>(Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |
| <b>物理特性</b>   | 尺寸 (L x W x H): 146 x 102 mm (5.7" x 4")<br>重量: 0.74 kg (1.63 lb), weight of total package  | 尺寸 (L x W x H): 146 x 102 mm (5.7" x 4")<br>重量: 0.5 kg (1.1 lb), weight of total package  | 尺寸 (L x W x H): 146 x 102 mm (5.7" x 4")<br>重量: 0.78 kg (1.72 lb), weight of total package  | 尺寸 (L x W x H): 146 x 102mm (5.7" x 4")<br>重量: 0.74 kg (1.63 lb), weight of total package   | 尺寸 (L x W x H): 146 x 102 mm (5.7" x 4")<br>重量: TBD  | 尺寸 (L x W x H): 146 x 102 mm (5.7" x 4")<br>重量: 0.84 kg (1.72lb), weight of total package  |
| <b>操作系统</b>   | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: Yes  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: Yes  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: Yes  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: Yes  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: Yes   | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: Yes   |
| <b>认证</b>     | EMC, FCC  | CE, FCC   | CE, FCC   | CE, FCC   | CE, FCC  | CE, FCC  |





| 型号名           | MIO-2260  | MIO-2261   | MIO-2262   | MIO-2263   | MIO-3260  | MIO-2270  |   |
|---------------|---|--|--|--|---|---|---|
| <b>外形尺寸</b>   | MIO-Ultra   | MIO-Ultra  | MIO-Ultra  | MIO-Ultra  | MIO-Ultra   | MIO-Ultra   |   |
| <b>处理器系统</b>  | CPU: Intel Atom N455<br>CPU TDP: 6.5W<br>频率: 1.66 GHz<br>核数: 1<br>L2 Cache: 512 KB<br>L3 Cache: -<br>BIOS: AMI EFI 16Mbit<br>系统芯片组: Intel ICH8  | CPU: Intel Atom N2600/N2800<br>CPU TDP: 3.5W/6.5W<br>频率: 1.6 GHz/1.86 GHz<br>核数: 2<br>L2 Cache: 1MB<br>L3 Cache: -<br>BIOS: AMI EFI 16Mbit<br>系统芯片组: Intel ICH8  | CPU: Intel Atom N2600/N2800<br>CPU TDP: 3.5W/6.5W<br>频率: 1.6 GHz/1.86 GHz<br>核数: 2<br>L2 Cache: 1MB<br>L3 Cache: -<br>BIOS: AMI EFI 16Mbit<br>系统芯片组: Intel NM10  | CPU: Intel Atom E3825 / Celeron J1900<br>CPU TDP: 6W/ 10W<br>频率: 1.33 GHz/ 2.0 GHz<br>核数: 2/ 4<br>L2 Cache: 2MB<br>L3 Cache: -<br>BIOS: AMI EFI 64 Mbit<br>系统芯片组: Intel Atom SoC   | CPU: Intel Atom E3825/Celeron N2930<br>CPU TDP: 6W/7.5W<br>频率: 1.33 GHz/ 1.83 GHz<br>核数: 2/ 4<br>L2 Cache: 2MB<br>L3 Cache: -<br>BIOS: AMI EFI 64 Mbit<br>系统芯片组: Intel Atom SoC   | CPU: AMD G-Series SoC GX-415GA<br>CPU TDP: 15W/6W<br>频率: 1.5 GHz/ 1.0 GHz<br>核数: 4/ 2<br>L2 Cache: 2MB/ 1MB<br>L3 Cache: -<br>BIOS: AMI EFI 32 Mbit<br>系统芯片组: AMD G-Series SoC  | CPU: AMD G-Series SoC GX-415GA<br>CPU TDP: 15W/6W<br>频率: 1.5 GHz/ 1.0 GHz<br>核数: 4/ 2<br>L2 Cache: 2MB/ 1MB<br>L3 Cache: -<br>BIOS: AMI EFI 32 Mbit<br>系统芯片组: AMD G-Series SoC  |
| <b>内存</b>     | 技术: DDR3 667 MHz<br>最大容量: 2 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: Integrated Intel GMA 3150  | 技术: DDR3 800MHz/DDR3 1066MHz<br>最大容量: 4 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: Integrated Intel GMA 3600 series  | 技术: DDR3 800MHz/DDR3 1066MHz<br>最大容量: 4 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: Integrated Intel GMA 3600 series  | 技术: DDR3L 1066/ 1333 MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: Intel Gen7 graphic engine   | 技术: DDR3 1066/ 1333 MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: Intel Gen7 graphic engine   | 技术: DDR3/3L 1600 MHz/ 1066 MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: AMD Radeon HD 8330E  | 技术: DDR3/3L 1600 MHz/ 1066 MHz<br>最大容量: 8 GB<br>插槽: 1 x 204-pin SODIMM<br>控制器: AMD Radeon HD 8330E  |
| <b>显示</b>     | 图形引擎: Intel Gen 3.5 DX9, MPEG2 Decode in HW, Embedded Gen3.5+ GFX Core<br>显存: Share with system memory up to 224MB<br>VGA: Up to 1400 x 1050 at 60 Hz<br>LCD (LVDS/eDP): LVDS 18-bit, up to 1366 x 768 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): -<br>Multiple Display: VGA+LVDS  | 图形引擎: DirectX® 9 and OpenGL3.0 support HW Accelerated Decode: MPEG2, H.264, VC-1<br>显存: Share with system memory up to 256MB<br>VGA: Up to 1920 x 1200 at 60 Hz<br>LCD (LVDS/eDP): LVDS 18/24-bit, up to 1366 x 768 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): -<br>Multiple Display: VGA+LVDS  | 图形引擎: DirectX® 9 and OpenGL3.0 support HW Accelerated Decode: MPEG2, H.264, VC-1<br>显存: Share with system memory up to 256MB<br>VGA: Up to 1920 x 1200 at 60 Hz<br>LCD (LVDS/eDP): LVDS 18/24-bit, up to 1366 x 768 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): -<br>Multiple Display: VGA+LVDS  | 图形引擎: DirectX® 11, OGL 3.2, OCL 1.1, OGL ES 2.0.2, 2D/ 3D Acceleration, Encode: H264, MPEG2/4, VC1, WMV9, Decode: H264, MPEG2<br>显存: Share with system memory up to 384 MB<br>VGA: Up to 1920 x 1200 at 60 Hz<br>LCD (LVDS/eDP): 18/24-bit LVDS, up to 1440 x 900 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp<br>Multiple Display: VGA+LVDS, HDMI+LVDS             | 图形引擎: DirectX® 11, OGL 3.2, OCL 1.1, OGL ES 2.0.2, 2D/ 3D Acceleration, Encode: H264, MPEG2/4, VC1, WMV9, Decode: H264, MPEG2<br>显存: Share with system memory up to 384 MB<br>VGA: Up to 1600 x 1200 at 60 Hz<br>LCD (LVDS/eDP): LVDS 24-bit, up to 1400 x 900 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): DP or HDMI<br>Multiple Display: LVDS+VGA or LVDS+DP/HDMI or VGA+DP/HDMI  | 图形引擎: DirectX® 11.1 graphic with UVD4.2, Open GL4.1/ Open CL 1.2, 2D/ 3D Acceleration, Motion Video Acceleration, Hardware decode (JVD) for H.264, MPEG2/4, VC1, MVC<br>显存: TBD<br>VGA: Up to 2048 x 1536 at 60Hz for GX-415GA<br>LCD (LVDS/eDP): LVDS 18-bit, up to 1600 x 900 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp<br>Multiple Display: VGA+LVDS, HDMI+LVDS                                      | 图形引擎: DirectX® 11.1 graphic with UVD4.2, Open GL4.1/ Open CL 1.2, 2D/ 3D Acceleration, Motion Video Acceleration, Hardware decode (JVD) for H.264, MPEG2/4, VC1, MVC<br>显存: TBD<br>VGA: Up to 2048 x 1536 at 60Hz for GX-415GA<br>LCD (LVDS/eDP): LVDS 18-bit, up to 1600 x 900 at 60 Hz<br>DDI (HDMI/DVI/DisplayPort): HDMI 1.4a 1920x1200 at 60 Hz/ 24bpp<br>Multiple Display: VGA+LVDS, HDMI+LVDS                                      |
| <b>扩展接口</b>   | Mini PCIe: 1 x Half-size<br>SMBus: 1<br>iC: 1 (Shares with SMBus pin, supported by request)<br>MIOe: SMBus, 3 x USB 2.0, 4 x PCIe x1, LPC, line-out, Reset, PowerOn, +5Vsb, +12Vsb<br>64-pin connector A: -<br>64-pin connector B: -  | Mini PCIe: 1 x Half-size<br>SMBus: 1<br>iC: 1 (Shares with SMBus pin, supported by request)<br>MIOe: 2 x USB 2.0, 2 x PCIe x1, LPC, line-out, SMBus, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb<br>64-pin connector A: -<br>64-pin connector B: -  | Mini PCIe: 1 x Full-size (Default support mSATA, selected by BIOS)<br>SMBus: 1 (from 64pin connector B)<br>iC: 1 (from 64pin connector B)<br>MIOe: SMBus, 3 x USB 2.0, 2 x PCIe x1, LPC, line-out, DP/HDMI (HDMI supported by request), Reset, PowerOn, +5Vsb, +12Vsb<br>64-pin connector A: 12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED<br>64-pin connector B: SMBus, i2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line in/out, 2 x RS-232 | Mini PCIe: 1 x Half size<br>SMBus: 1<br>iC: -<br>MIOe: 2 x USB2.0, 2 PCIe x1, LPC, line-out, SMBus, DP (HDMI supported by request), Reset, PowerOn, +5 Vsb, +12 Vsb<br>64-pin connector A: -<br>64-pin connector B: -  | Mini PCIe: 1 x Half size<br>SMBus: 1 (Shares with SMBus pin, supported by request)<br>iC: -<br>MIOe: 1 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, SMBus, DP or HDMI supported by request, 5 Vsb/12 Vsb power<br>64-pin connector A: 12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED<br>64-pin connector B: SMBus, i2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line-in, Line-out, Mic-in, 2 x RS-232                             | Mini PCIe: 1 x Half size<br>SMBus: 1<br>iC: -<br>MIOe: 2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, SMBus, DP or HDMI supported by request, 5 Vsb/12 Vsb power<br>64-pin connector A: 12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED<br>64-pin connector B: SMBus, i2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line-in, Line-out, Mic-in, 2 x RS-232   | Mini PCIe: 1 x Half size<br>SMBus: 1<br>iC: -<br>MIOe: 2 x USB2.0, 2 PCIe x1, LPC, HD Audio line-out, SMBus, DP or HDMI supported by request, 5 Vsb/12 Vsb power<br>64-pin connector A: 12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED<br>64-pin connector B: SMBus, i2C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line-in, Line-out, Mic-in, 2 x RS-232   |
| <b>以太网</b>    | 控制器: ICHM + Intel 82567V<br>速度: 10/100/1000Mbps<br>连接器: RJ45  | 控制器: Intel 82583V<br>速度: 10/100/1000Mbps<br>连接器: RJ45  | 控制器: Intel 82583V<br>速度: 10/100/1000Mbps<br>连接器: from 64pin connector A  | 控制器: Intel i210<br>速度: 10/100/1000Mbps<br>连接器: RJ45  | 控制器: Intel i210<br>速度: 10/100/1000Mbps<br>连接器: RJ45   | 控制器: GbE Realtek RTL8111E<br>速度: 10/100/1000Mbps<br>连接器: RJ45   | 控制器: GbE Realtek RTL8111E<br>速度: 10/100/1000Mbps<br>连接器: RJ45   |
| <b>音频</b>     | 音频接口: High Definition Audio<br>CODEC: Realtek ALC892<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out  | 音频接口: High Definition Audio<br>CODEC: Realtek ALC892<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out   | 音频接口: High Definition Audio<br>CODEC: Realtek ALC892<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line out (from 64pin connector B)  | 音频接口: High Definition Audio<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line-out  | 音频接口: High Definition Audio<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line-out   | 音频接口: High Definition Audio<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line-out   | 音频接口: High Definition Audio<br>CODEC: Realtek ALC888S<br>Amplifier: Optional via MIOe<br>连接器: Line-in, Line-out   |
| <b>看门狗定时器</b> | 255 levels timer interval, programmable by software   | 255 levels timer interval, programmable by software  | 255 levels timer interval, programmable by software  | 255 levels timer interval, programmable by software  | 255 levels timer interval, programmable by software   | 255 levels timer interval, programmable by software   |   |
| <b>存储</b>     | SATA: 1, up to 3Gb/s (300 MB/s)<br>mSATA: 1 x CompactFlash TYPE I (Primary Master PATA Channel)   | SATA: 1, up to 3Gb/s (300 MB/s)<br>mSATA: -  | SATA: 1, up to 3Gb/s (300 MB/s)<br>mSATA: -  | SATA: 1, up to 3Gb/s (300 MB/s)<br>mSATA: 1  | SATA: 1, up to 3Gb/s (300 MB/s)<br>mSATA: 1 (Supports mSATA or USB interface module or full size miniPCIe, selected by BIOS, default is mSATA)  | SATA: 1, up to 6Gb/s (600 MB/s)<br>mSATA: -   | SATA: 1, up to 6Gb/s (600 MB/s)<br>mSATA: -   |
| <b>I/O</b>    | USB3.0: -<br>USB2.0: 2<br>GPIO: 8-bit GPIO (from 64pin connector A)<br>COM Port: 2 x RS-232<br>复位按钮: 1<br>智能风扇: -<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: ATX 2x2P DC Jack (optional)<br>功耗 (Idle): 0.64 A, 12 V (7.68 W)<br>功耗 (最大, HCT下测试): 0.86 A, 12 V (10.32 W)<br>电池: 3V / 210 mAh | USB3.0: -<br>USB2.0: 4 (2 from Rear, 2 from Internal)<br>GPIO: 8-bit GPIO (from 64pin connector A)<br>COM Port: 2 x RS-232<br>复位按钮: 1<br>智能风扇: -<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: -<br>功耗 (Idle): 0.35 A @ 12 V (4.2 W)<br>0.46 A @ 12 V (5.52 W)<br>0.76 A @ 12 V (9.12 W)<br>0.80 A @ 12 V (9.6 W)<br>电池: 3V / 210 mAh | USB3.0: -<br>USB2.0: 4 (2 from 64pin connector A, 2 from 64pin connector B)<br>GPIO: 8-bit GPIO (from 64pin connector A)<br>COM Port: 2 x RS-232<br>复位按钮: 1<br>智能风扇: -<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: From 64pin connector A<br>功耗 (Idle): 0.43 A @ 12 V (5.24 W)<br>0.51 A @ 12 V (6.12 W)<br>0.67 A @ 12 V (8.05 W)<br>0.82 A @ 12 V (9.8 W)<br>电池: 3V / 210 mAh   | USB3.0: 1 (from MIOe)<br>USB2.0: 3 (1 from rear, 2 from internal)<br>GPIO: 8-bit GPIO (from 64pin connector A)<br>COM Port: 1 x RS-232, 1 x RS-232/422/485<br>复位按钮: 1<br>智能风扇: -<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: From 64pin connector A<br>功耗 (Idle): J1900: 5.00W/4.62W<br>E3825: 7.08W<br>J1900: 12.48W<br>E3825: 9.12W<br>电池: 3V / 210 mAh | USB3.0: 1 (from MIOe)<br>USB2.0: 4 (2 from 64pin connector A, 2 from 64pin connector B)<br>GPIO: 8-bit general purpose input/output<br>COM Port: 2 x RS-232/422/485 (from 64pin connector B)<br>复位按钮: 1<br>智能风扇: -<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: ATX 1x2P DC Jack (optional)<br>功耗 (Idle): E3825: 5.00W/4.62W<br>N2930: 5.32W/4.99W<br>E3825: 9.41W/9.40W<br>N2930: 12.59W/11.39W<br>电池: Lithium 3V / 210 mA | USB3.0: 2<br>USB2.0: 2 (from internal)<br>GPIO: 8-bit general purpose input/output<br>COM Port: 1 x RS-232, 1 x RS-232/422/485 with RS-485 with Auto-flow control<br>复位按钮: 1<br>智能风扇: 1 (GX-415GA)<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: 3.96mm 1x2P DC Jack (optional)<br>功耗 (Idle): GX-415GA: 12.6W<br>GX-210JA: 5.93W<br>GX-415GA: 15.12W<br>GX-210JA: 10.2W<br>电池: Lithium 3V / 210 mA | USB3.0: 2<br>USB2.0: 2 (from internal)<br>GPIO: 8-bit general purpose input/output<br>COM Port: 1 x RS-232, 1 x RS-232/422/485 with RS-485 with Auto-flow control<br>复位按钮: 1<br>智能风扇: 1 (GX-415GA)<br>电源类型: Single 12V DC power input<br>电源电压: Supports single 12V input, ± 10%<br>连接器: 3.96mm 1x2P DC Jack (optional)<br>功耗 (Idle): GX-415GA: 12.6W<br>GX-210JA: 5.93W<br>GX-415GA: 15.12W<br>GX-210JA: 10.2W<br>电池: Lithium 3V / 210 mA |
| <b>环境</b>     | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing  | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing   | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing   | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing   | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing  | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing  | 工作: 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)<br>非工作: -40° C ~ 85° C and 60° C @ 95% RH non-condensing  |
| <b>物理特性</b>   | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: 0.42 kg (0.93 lb), weight of total package   | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: 0.48 kg (1.06 lb), weight of total package  | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: 0.37 kg (0.82 lb), weight of total package  | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: 0.46 kg (1.01 lb), weight of total package  | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: MIO-3260L: 0.35 kg (0.77 lb), MIO-3260C: 0.55 kg (1.21 lb), weight of total package  | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: 0.45 kg (0.99 lb), weight of total package   | 尺寸 (L x W x H): 100 x 72 mm (3.9" x 2.8")<br>重量: 0.45 kg (0.99 lb), weight of total package   |
| <b>操作系统</b>   | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -   | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -   | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -   | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -  | Microsoft Windows: Yes<br>Linux: Yes<br>SUSIAccess: Yes<br>iManager: -  |
| <b>认证</b>     | EMC: CE,FCC   | EMC: CE,FCC  | EMC: CE,FCC  | EMC: CE,FCC  | EMC: CE,FCC   | EMC: CE,FCC   |   |

## 嵌入式操作系统

### 完整解决方案，加速应用开发

研华全面的MI/O Extension解决方案提供定制化嵌入式操作系统，并内置配置实用程序，因而方便系统集成。



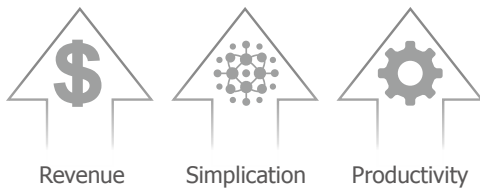
## 强大的SUSIAccess & iManager软件支持

### SUSIAccess用于远程设备管理

SUSIAccess软件应用已预加载于MI/O SBC，可对嵌入式设备进行集中监控和管理。通过所提供的即用型远程访问解决方案，系统集成商可以更多地聚焦于自己的应用并使用SUSIAccess配置系统、监控设备状态以及故障时恢复系统。

#### SUSIAccess的优势

- 远程监控多个设备
- 定期电源管理
- 防止系统受到潜在威胁
- 可在远程桌面访问系统
- 降低嵌入式系统部署的复杂度
- 节省开发时间和资源
- 提高系统可靠性
- 降低售后服务成本



### 智能自我管理-iManager

MI/O Compact系列所有产品都支持iManager。iManager是一种智能自我管理跨平台工具，能够监测系统状态问题，并在发生异常时采取措施；还能够保证在苛刻低温环境下正常启动，出现压降时系统可自动恢复。iManager使整个系统变得更为可靠和智能。

#### 可靠性更高

多级看门狗定时器保护、动态散热&风扇控制

#### 整合更简单

性能更卓越，API可支持跨平台整合

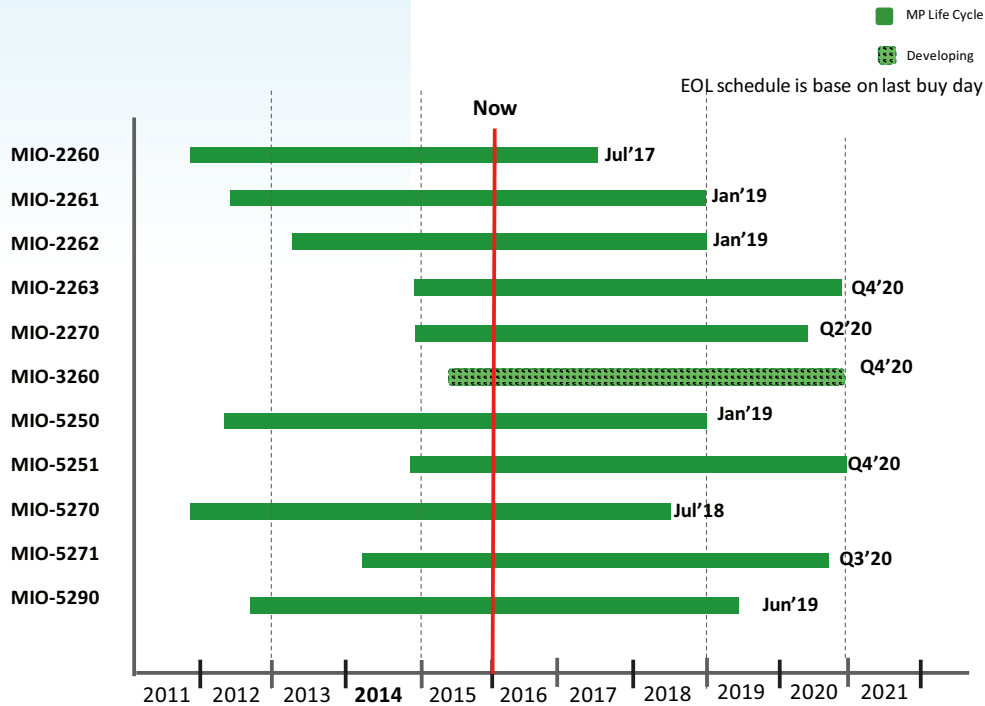
#### 系统更安全

实时监控&响应、加密用户EEPROM数据存储



\*适用于所有MI/O-Compact SBC系列。

## MI/O Extension Product Life Cycle



## Embedded OS Support List

|          | Platform             | CE6 (p/n) | CE7(p/n)   | Win8/8.1 (p/n) | WES7 (p/n)                               | Win XPE (p/n)                            | QNX                                 | Vxwork | Linux (Ubuntu)                          |
|----------|----------------------|-----------|------------|----------------|--|--|-------------------------------------|--------|---|
| MIO-5250 | Intel Cedar Trail    | N/A       | 2070012241 | N/A            | 2070011953<br>2070011955                 | Support (graphic driver support by case) | 6.5(graphic driver support by case) | 6.9.2  | 12.04 (graphic driver support by case)  |
| MIO-5251 | Intel Bay Trail      | N/A       | N/A        | Support        | Coming soon                              | N/A                                      | 6.6(Coming soon)                    | 6.9.3  | V13.10                                  |
| MIO-5270 | AMD G-series         | Support   | Support    | Support        | 2070010845                               | 2070010844                               | N/A                                 | N/A    | V12.04                                  |
| MIO-5271 | Intel Haswell ULT    | N/A       | N/A        | Support        | 2070012422                               | N/A                                      | 6.6                                 | 6.9.2  | V13.04                                  |
| MIO-5290 | Intel Ivy bridge     | N/A       | N/A        | Support        | 2070011453/<br>2070012563<br>2070011452/ | 2070011449                               | 6.5                                 | 6.9    | V12.04/CentOS 6.3                       |
| MIO-2260 | Intel Atom N455/D525 | N/A       | 2070011287 | N/A            | 2070009835                               | 2070010314<br>2070010313                 | 6.5                                 | 6.8    | V10.04.1                                |
| MIO-2261 | Intel Cedar Trail    | N/A       | 2070012214 | N/A            | 2070011558<br>2070011559                 | Support by request                       | 6.5(graphic driver support by case) | 6.9.2  | V12.04 (graphic driver support by case) |
| MIO-2262 | Intel Cedar Trail    | N/A       | 2070012214 | N/A            | 2070011558<br>2070011559                 | Support by request                       | 6.5(graphic driver support by case) | 6.9.2  | V12.04 (graphic driver support by case) |
| MIO-2263 | Intel BayTrail       | N/A       | N/A        | Support        | Coming soon                              | N/A                                      | 6.6(Coming soon)                    | 6.9.3  | V13.10                                  |
| MIO-2270 | AMD eKabini          | N/A       | N/A        | Support        | 2070012881                               | 2070012828                               | N/A                                 | N/A    | V13.04                                  |
| MIO-9290 | Intel Ivy bridge     | N/A       | N/A        | Support        | 2070012220 (x86)<br>2070012219 (64bit)   | 2070012322                               | 6.5                                 | 6.9    | V12.04                                  |

## MI/O模块化系统借助丰富I/O连接性能 助力金融和银行自助服务终端机可靠操作



### 简介

自助服务终端机已流行多年，且被越来越多的金融机构和银行所采用。最初只是作为常规的ATM，在繁忙时间或多个远程位置处理各种账户交易或服务。客户可以获得许多便利，包括查看账户、完成交易订单、打印正式收据、支付账单和提取现金等。

此外，这还有助于减轻银行柜员的负担，使其能够为需要其它帮助的客户提供更优质的服务，缩短客户等待时间并提高服务效率。

### 应用要求

研华的一家客户期望找到一款具有丰富I/O连接和多个可靠串口的嵌入式系统，用于连接多种打印机和读卡器，同时支持无噪音操作以便为客户提供安静的沟通环境。此外，银行自助服务终端的关键任务是保护客户的个人信息，如安全ID号码和银行帐户信息。

### 无噪音操作

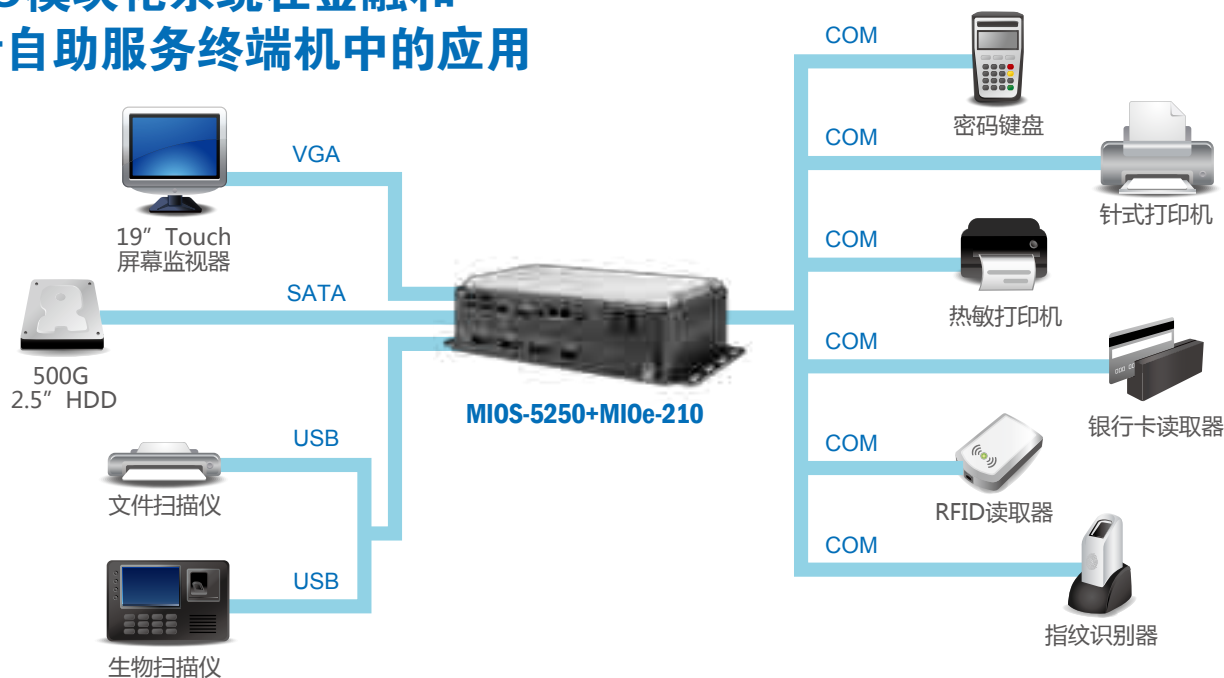
银行自助服务终端机使用频繁，因此无噪音和可靠操作尤为关键。

MIO-5250搭载Intel® Atom™ N2600/ D2550双核低功耗处理器，其无风扇设计更减少了噪音并提供更高MTBF。

### 远程管理和安全性

在银行业中，系统安全对于个人数据保护和互联网数据传输至关重要的。MIO-5250集成研华SUSIAccess远程管理软件，通过McAfee实现全面系统保护，并可提供有效方式拦截未经授权的应用程序和代码，而无需IT管理员对安全应用程序名单进行手动维护。只有授权软件才允许运行，且不能被篡改。借助于SUSIAccess远程管理功能和Acronis系统恢复功能，银行即可监控所有分支ATM机的状态并提供远程管理，如屏幕挂起、重启请求、数据备份和自动恢复，从而节省巨大的维护成本并提供所有必要的安全保护。

## MI/O模块化系统在金融和银行自助服务终端机中的应用





## MI/O模块化系统配有PoE标准以太网端口 确保视频监控不间断记录



### 简介

大多数国家都已增加视频监控投入，以应对日益严峻的安全问题。如今，城市化和经济的活跃促进了视频监控市场的发展。随着公共服务预算的标准化，行之有效的治安战略需求呼之欲出。由于安全问题日益突出，而审计和运作效率需求也在提升，大数据监控和采集开始被关注。因此，作为监控系统的主角，网络录像机(NVR)开始部署于车辆、街道、家居和公共场所。

### 应用要求

研华的一家重要客户正设计一款移动车载NVR应用，要求系统可通过局域网连接网络摄像机，并通过无线连接至视频服务器。网络摄像机还需要通过电源线连接至输入电源。作为移动解决方案，此应用必须外形紧凑且易于升级，且是一款具有卓越图像处理和数据传输能力的高性能平台。因此，研华MI/O模块化系统（MIOS-5271和MIOe-3674 PoE模块组合）成为此情景应用的理想选择。

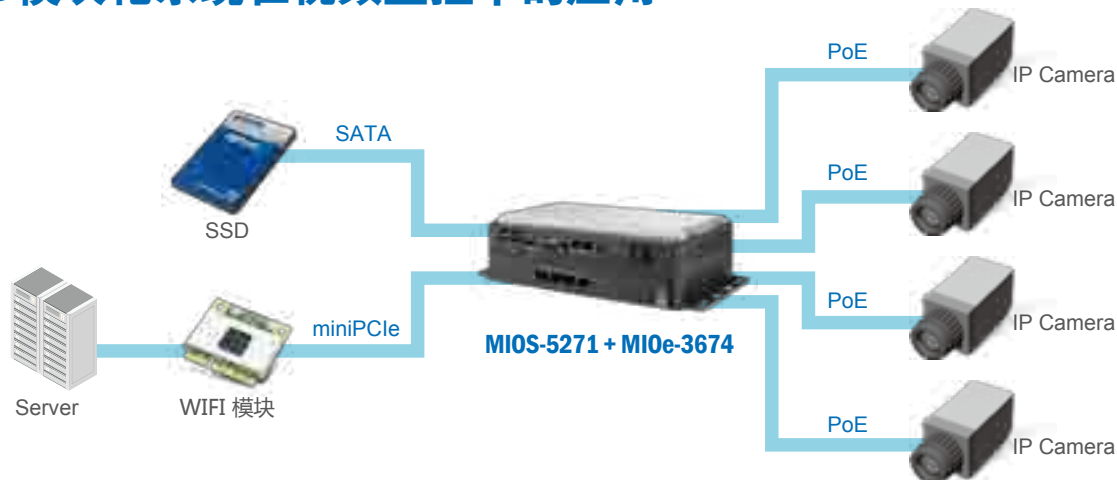
### MI/O系统设计灵活

MIOS-5271高性能工控系统搭载第四代Intel® Core™ i5嵌入式处理器，其4个PoE标准扩展以太网端口可确保远程安全监控，并实现高速图像处理和数据传输。MIOS-5271的模块化设计为未来I/O升级提供了高扩展灵活性，在技术条件成熟时甚至还可作为完整SBC，从而节约现有机箱和扩展模块的升级成本。

### 远程管理

对于经常部署在远程站点而难以维护的监控应用，远程管理设备管理发挥至关重要的作用。通过集成研华SUSIAccess远程管理软件，客户能够更轻松地远程监控每辆车的NVR系统，便捷地同步升级系统中的软件，因此可大幅缩减维护时间和成本。

## MI/O模块化系统在视频监控中的应用

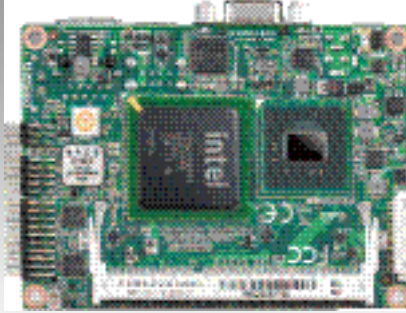




# MIO-2260

Intel® Atom™ N455 MI/O-Ultra SBC,  
DDR3, 18-bitLVDS, VGA ,1 GbE, Mini PCIe,  
2 USB, 2 COM, MIOe

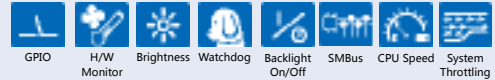
NEW



## 特点

- 采用Intel Atom N455+ICH8M处理平台，支持DDR3内存
- Intel Gen3.5 DX9，支持MPEG2硬件解码，双独立显示：18位LVDS+VGA
- 支持12V +/-10% DC 电源输入，支持电源热拔插
- 1\*Giga LAN/2\*COM/1\*SATA/2\*USB/GPIO/SMBus/CF/MIOe 扩展接口
- 支持嵌入式软件API & 开发工具

Software APIs:



Utilities:



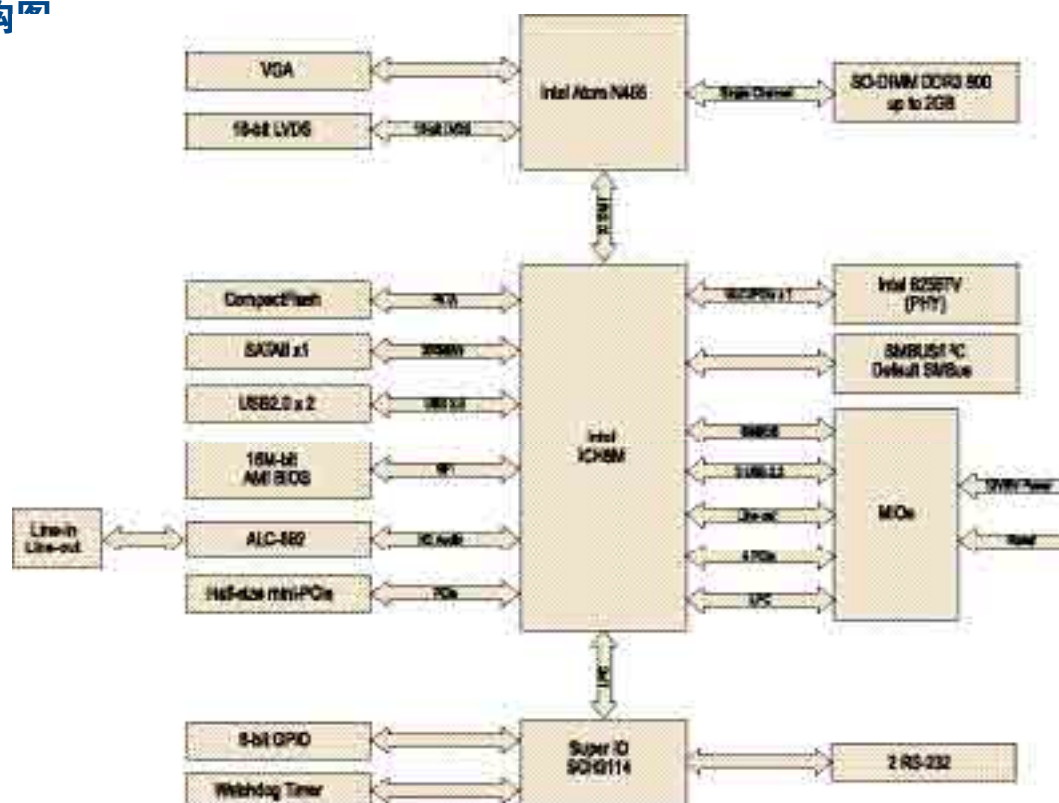
VxWorks



## 规格

|        |                       |  |
|--------|-----------------------|--|
| 处理器系统  | CPU                   | Intel Atom N455 Single Core 1.66 GHz Processor                           |
|        | Frequency             | 1.66 GHz   |
|        | 二级缓存                  | 512 KB   |
|        | 芯片组                   | Intel N455 + ICH8M   |
|        | BIOS                  | AMI 16 Mbit Flash BIOS   |
| 内存     | 技术                    | DDR3 667 MHz   |
|        | 最大容量                  | 2 GB   |
|        | 插槽                    | 1 x 204-pin SODIMM   |
| 显示     | 芯片组                   | Intel Atom Processor N455 1.66GHz  |
|        | VRAM                  | Optimized Shared Memory Architecture up to 224 MB system memory          |
|        | 图形引擎                  | Intel Gen 3.5 DX9, MPEG2 Decode in HW<br>Embedded Gen3.5+ GFX Core       |
|        | LVDS                  | LVDS: Single channel 18-bit LVDS up to WXGA 1366 x 768                   |
|        | VGA                   | Intel Atom N455 Single Core up to 1400 x 1050 (SXGA)                     |
| 以太网    | 速度                    | 10/100/1000 Mbps (Supports Wake on LAN)                                  |
|        | 控制器                   | GbE1 Intel 82567V  |
|        | 连接器                   | RJ45   |
| Audio  | 芯片组                   | Realtek ALC892<br>High Definition Audio (HD), Line-in, Line out          |
| 看门狗定时器 |                       | 输出 System reset, Programmable counter from 1 ~ 255 minutes/ seconds      |
| 存储     | Compact Flash         | Supports CompactFlash Card TYPE II (Primary Master IDE Channel)          |
|        | SATA                  | 1 SATA II (最大数据传输率 Rate 300 MB/s)  |
| 外部 I/O | Serial                | -  |
|        | 以太网                   | 1 (10/100/1000Mbps)  |
|        | USB                   | 2  |
|        | DC Power              | 1 (support by request)   |
|        | Serial                | 2 x RS-232 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)      |
| 内部 I/O | I <sup>2</sup> C      | 1 (Share SMBus pin , support by request)                                 |
|        | SMBUS                 | 1  |
|        | GPIO                  | 8-bit GPIO   |
|        | Mini PCI Express      | 1 (half size)  |
| 电源     | MIOe                  | 1 (SMBus, 3 x USB2.0, 4 x PCIe, line out, LPC, 5V/12V power, ACPI S3/S5) |
|        | 电源类型                  | AT (Supports DC power hot plug design)                                   |
|        | 电源电压                  | Support single 12V input (12V +/- 10%)                                   |
|        | 外围设备电压总输出             | 5V@3A for all devices , 12V@1A for MIOe                                  |
|        | 功耗 (Typical)          | 0.64A, 12V   |
|        | 功耗 (Max, test in HCT) | 0.86A, 12V   |
|        | 电源管理                  | APM, ACPI  |
|        | 电池                    | Lithium 3 V/210 mA   |
| 环境     | 工作                    | 0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)            |
|        | 非工作                   | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing                         |
| 物理特性   | 尺寸 (L x W)            | 100 x 72 mm (3.9" x 2.8" )   |
|        | 总高                    | 33.48 mm   |
|        | 重量                    | 0.42kg ( 0.93lb), weight of total package                                |

## 结构



## 订货信息

| 料号               | CPU                      | L2 Cache | LVDS   | VGA | GbE | HD Audio | RS-232 | USB 2.0 | GPIO  | SATAII | CF | MIOe | mini PCIe     | DC power jack | Thermal Solution | 工作温度      |
|------------------|--------------------------|----------|--------|-----|-----|----------|--------|---------|-------|--------|----|------|---------------|---------------|------------------|-----------|
| MIO-2260NF-S6A1E | Intel Atom N455 1.66 GHz | 512 KB   | 18-bit | Yes | 1   | Yes      | 2      | 2       | 8-bit | 1      | 1  | 1    | 1 (half size) | -             | Passive          | 0 ~ 60° C |

Note: Passive = fanless; Active = with fan

## 装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
|                | MIO-2260 SBC  |    |
|                | Startup Manual                                      |    |
|                | Utility CD  |    |
| 1700006291     | SATA Cable  | 1  |
| 1701200220     | RS-232 x 2 ports 2.0 mm pitch 22 cm                 | 1  |
| 1700019156     | Audio cable 2.0 mm pitch 20 cm (line in & line out) | 1  |
| 1700019656     | SATA power cable 5P-1.25/5P-2.0+SATA 5P 15cm        | 1  |
| 9666226000E    | Audio cable 2.0mm pitch 20cm (line in & line out)   | 1  |
| 1960053175T001 | Passive heatsink 99.5 x 70.5 x 15.7 mm              |    |

## 可选配件

| 料号             | 描述            |
|----------------|---------------|
| 1960053176T001 | Heat spreader |

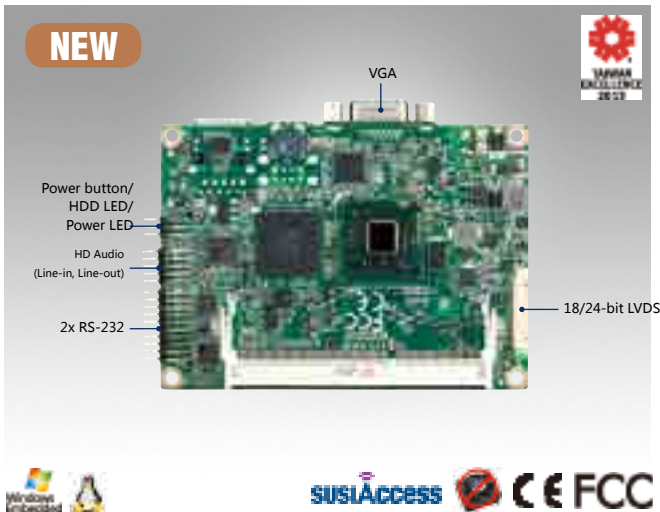
## Embedded OS/API

| Embedded OS/API | 料号         | 描述                               |
|-----------------|------------|----------------------------------|
| Win XPE         | 2070010314 | XPE WES2009 V4.0 24MUI           |
|                 | 2070010313 | XPE WES2009 V4.0 ENG             |
| WinCE           | 2070010331 | CE6.0 R3 Pro V6.0.0 ENG (3COM)   |
| WES 7           | 2070009835 | Image WES7E Intel Lunar V5.0 ENG |
| QNX             |            | V6.5/ 6.4/ 6.3                   |
| Vxwork          |            | V6.8                             |
| Linux           |            | Ubuntu V10.04                    |
| Software API    |            | SUSI V3.0                        |



# MIO-2261

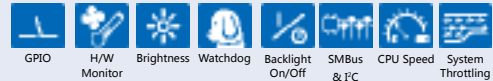
Intel® Atom™ N2600/ N2800 Pico-ITX SBC, DDR3, 18/24-bit LVDS, VGA, 1 GbE, Half-size Mini PCIe, 4 USB, 2 COM, SMBus, I<sup>2</sup>C, mSATA & MIOe



## 特点

- 嵌入式Intel Atom 双核N2600/N2800处理器 + Intel NM10, 1x 高达4 GB的DDR3内存
- DirectX 9, 双独立显示: 18/24-bit LVDS + VGA
- 采用集成多I/O的灵活设计: MIOe满足垂直应用并保留专业技术优势
- Intel GbE支持, 丰富I/O接口: 2 x COM、1 x SATA、4 x USB 2.0、GPIO、SMBus、mSATA和MIOe扩展接口
- 支持SUSIAccess和嵌入式软件 API

Software APIs:

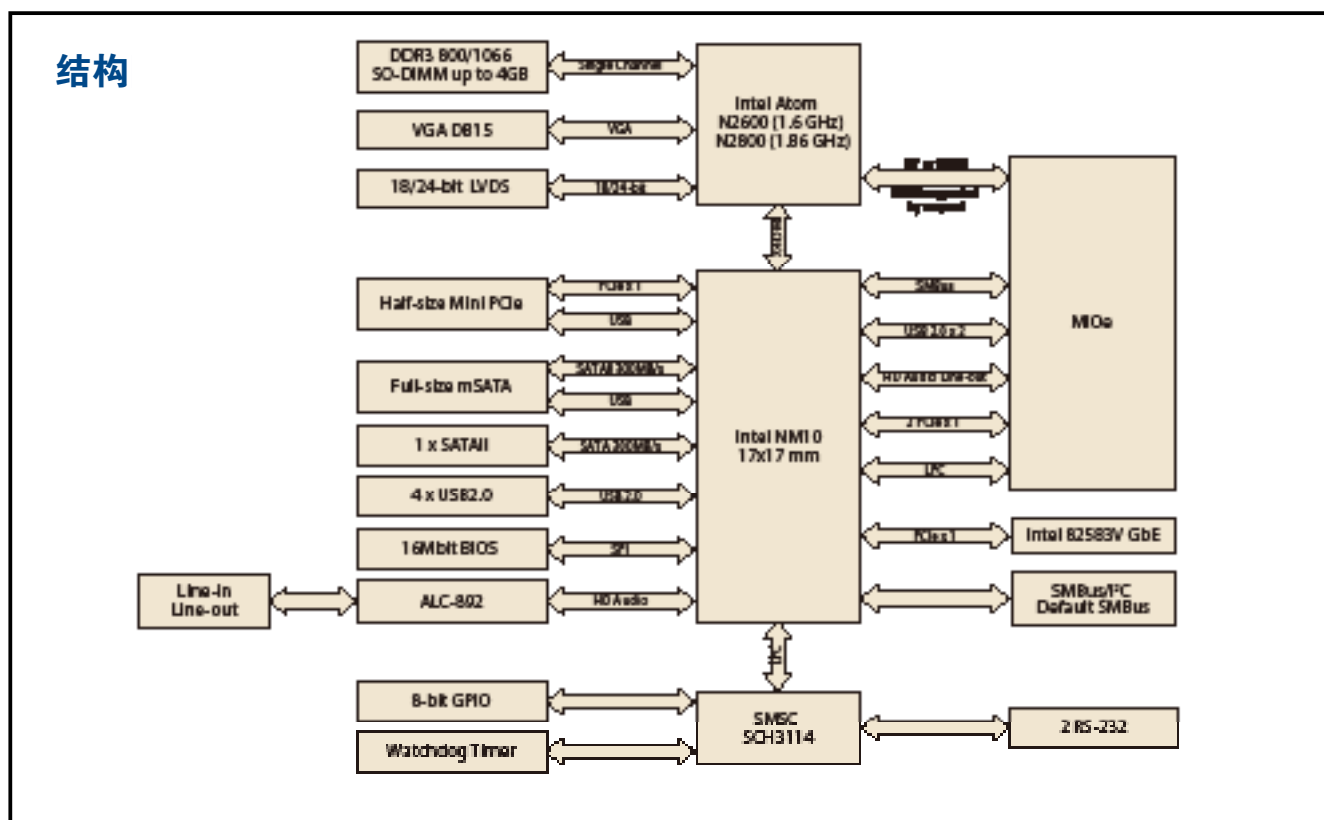


Utilities:



## 规格

|        |                       |  |
|--------|-----------------------|--|
| 处理器系统  | CPU                   | Intel Atom Dual Core N2600 1.6 GHz/ N2800 1.86 GHz   |
|        | 频率                    | Dual Core 1.6 GHz/ 1.86 GHz  |
|        | 二级缓存                  | 1 MB   |
|        | 系统芯片组                 | Intel Atom N2600/ N2800 + Intel NM10   |
| 内存     | BIOS                  | AMI EFI 16 Mbit  |
|        | 技术                    | DDR3 800 MHz (N2600), DDR3 1066 MHz (N2800)  |
|        | 最大容量                  | 4 GB   |
| 显示     | 插槽                    | 1 x 204-pin SODIMM   |
|        | 芯片组                   | Intel Atom N2600/ N2800  |
|        | 图形引擎                  | DirectX 9 and OpenGL3.0 support<br>H/W Decode/Acceleration: H.264, VC1, MPEG2  |
|        | LVDS                  | 18/24-bit LVDS1: up to 1366 x 768  |
|        | VGA                   | Up to 1920 x 1200  |
| 以太网    | 双显                    | VGA+LVDS   |
|        | 速度                    | 10/100/1000Mbps  |
|        | 控制器                   | GbE1 Intel 82583V 10/100/1000Mbps  |
| Audio  | 连接器                   | RJ45   |
| 看门狗定时器 | 速度                    | Realtek ALC892, High Definition Audio (HD), Line-in, Line out<br>output System reset, Programmable counter from 1 ~ 255 minutes/ seconds |
| 存储     | mSATA                 | 1 (Integrates USB signal, supports either mSATA or USB 接口 module)  |
|        | SATA                  | 1 x SATA II (Max. Data Transfer Rate 300 MB/s)   |
| 外部I/O  | 以太网                   | 1 (10/100/1000 Mbps)   |
|        | VGA                   | 1  |
|        | USB                   | 2 x USB 2.0  |
|        | DC 电源接口               | 1 (supported by request)   |
| 内部I/O  | USB                   | 2 x USB 2.0  |
|        | Serial                | 2 x RS-232(ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)   |
|        | I <sup>2</sup> C      | 1 (Shares with SMBus pin, supported by request)  |
|        | SMBus                 | 1 (Shares with I <sup>2</sup> C, default support SMBus)  |
|        | GPIO                  | 8-bit general purpose input/output   |
| 扩展     | Mini PCI Express      | 1 (half size)  |
|        | MIOe                  | MIOe (2 x USB 2.0, 2 x PCIe x1, LPC, HD Audio line-out,SMBus, DP or HDMI supported by request,<br>5 Vsb/12 Vsb power)                    |
| 电源     | 电源类型                  | Single 12V DC power input (Supports DC power hot plug)   |
|        | 电源电压                  | Supports single 12V input, ± 10%   |
|        | 外围设备电压总输出             | 5V @ 3A for CPU board and MIOe module totally, 12V @ 2A for MIOe module  |
|        | 功耗 (Typical)          | N2600: 0.35 A @ 12 V (4.2 W)<br>N2800: 0.46 A @ 12 V (5.52 W)  |
|        | 功耗 (Max, test in HCT) | N2600: 0.76 A @ 12 V (9.12 W)<br>N2800: 0.80 A @ 12 V (9.6 W)  |
|        | 电源管理                  | APM, ACPI, wake on LAN   |
| 环境     | 电池                    | 3 V / 210 mAh  |
|        | 工作                    | 0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)  |
| 物理特性   | 非工作                   | -40° C ~ 85° C and 60° C @ 95% RH non-condensing   |
|        | 尺寸 (L x W)            | 100 x 72 mm (3.9" x 2.8")  |
|        | 重量                    | 0.42 kg (0.93 lb), weight of total package   |
|        | 总重                    | 33.65 mm   |



## 订货信息

| 料号                 | CPU                    | L2 Cache | Memory     | LVDS      | HD Audio | VGA | USB2.0 | RS-232 | mSATA | SATAII | MIOe | Mini PCIe | Thermal Solution | 工作 Temp     |
|--------------------|------------------------|----------|------------|-----------|----------|-----|--------|--------|-------|--------|------|-----------|------------------|-------------|
| MIO-2261N-S6A1E    | Intel Atom N2600 1.6G  | 1MB L2   | SO-SIMM    | 18/24-bit | Yes      | Yes | 4      | 2      | Yes   | 1      | Yes  | Half-size | Passive          | 0 ~ 60° C   |
| MIO-2261N-S8A1E    | Intel Atom N2800 1.86G | 1MB L2   | SO-SIMM    | 18/24-bit | Yes      | Yes | 4      | 2      | Yes   | 1      | Yes  | Half-size | Passive          | 0 ~ 60° C   |
| MIO-2261Z-2GS6A1E  | Intel Atom N2600 1.6G  | 1MB L2   | 2GB bundle | 18/24-bit | Yes      | Yes | 4      | 2      | Yes   | 1      | Yes  | Half-size | Passive          | -20 ~ 80° C |
| MIO-2261Z2-2GS6A1E | Intel Atom N2600 1.6G  | 1MB L2   | 2GB bundle | 18/24-bit | Yes      | Yes | 4      | 2      | Yes   | 1      | Yes  | Half-size | Passive          | -40 ~ 85° C |
| MIO-2261Z2-2GS8A1E | Intel Atom N2800 1.86G | 1MB L2   | 2GB bundle | 18/24-bit | Yes      | Yes | 4      | 2      | Yes   | 1      | Yes  | Half-size | Passive          | -40 ~ 85° C |

Note: Passive = fanless; Active = with fan

## 装箱单

| 料号             | 描述  | Quantity |
|----------------|---|----------|
|                | MIO-2261 SBC<br>Startup Manual<br>Utility CD                                    |          |
| 1700006291     | SATA Cable 30cm   | 1        |
| 1700019656     | SATA power cable 5P-1.25/5P-2.0+SATA 5P 15 cm                                   | 1        |
| 1701200220     | RS-232 x 2 ports 2.0 mm pitch 22 cm   | 1        |
| 1700019156     | Audio cable 2.0 mm pitch 20 cm (line in & line out)                             | 1        |
| 1700002172     | USB cable 2.0mm pitch USB-A(F) 17cm   | 1        |
| 1700019705     | AT Power cable 12cm   | 1        |
| 9666226000E    | Screw and stud pack (1 screw for Mini PCIe, 4 M3 studs and screws for heatsink) | 1        |
| 1960055792T001 | CPU N2600/N2800 heatsink (99.5 x 70.5 x 15.7mm) for MIO-2261N                   | 1        |

## 可选配件

| 料号             | 描述  |
|----------------|---|
| 1960055791T001 | MIO-2261 Heat spreader (99.5 x 70.5 x 15.7mm) |

## Embedded OS/API

| Embedded OS/API | 描述                              |
|-----------------|---------------------------------|
| WinCE 7.0       | CE 7.0                          |
| Win XPE         | WES 2009                        |
| 2070011283      | WES7E SP1 x32 MIO-2261 V5.1 ENG |
| Linux           | Ubuntu 12.04                    |
| Software API    | SUSI V3.0                       |

## 后部I/O视图



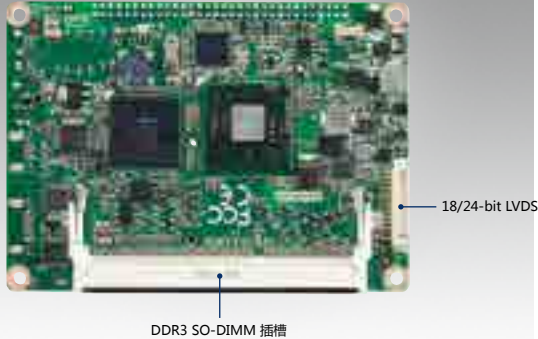
MIO-2261N-S6A1E  
MIO-2261N-S8A1E

MIO-2261 w/ DC jack (by request)

# MIO-2262

Intel® Atom™ N2600/ N2800 Pico-ITX SBC, DDR3, 18/24-bit LVDS, VGA, 1 GbE, Full-size Mini PCIe, 4 USB, 2 COM, SMBus, I<sup>2</sup>C, mSATA & MIOe

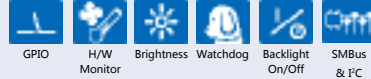
NEW



## 特点

- 嵌入式Intel Atom 双核N2600/N2800处理器+Intel NM10, 1x 高达4 GB的DDR3内存
- DirectX 9, 双独立显示: 18/24-bit LVDS + VGA
- 采用集成多I/O的灵活设计: MIOe满足垂直应用并保留专业技术优势
- Intel GbE支持, 丰富I/O接口: 2 x COM、1 x SATA、4 x USB 2.0、GPIO、SMBus、mSATA和MIOe扩展接口
- 支持SUSIAccess和嵌入式软件 API

Software APIs:



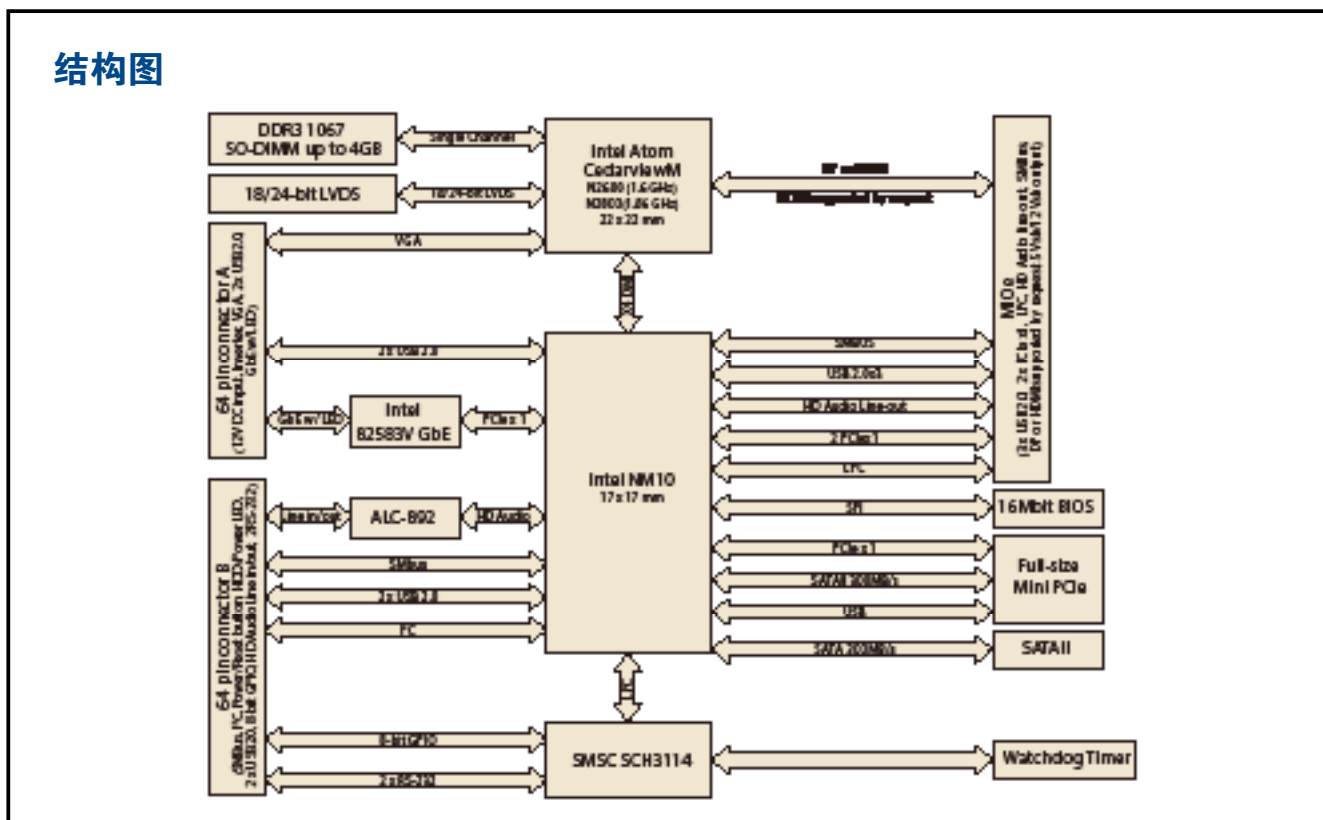
Utilities:



## 规格

|        |                       |  |
|--------|-----------------------|--|
| 处理器系统  | CPU                   | Intel Atom Dual Core N2600 1.6 GHz/ N2800 1.86 GHz   |
|        | Frequency             | Dual Core 1.6 GHz/ 1.86 GHz  |
|        | L2 Cache              | 1 MB   |
|        | System Chipset        | Intel Atom N2600/ N2800 + Intel NM10   |
|        | BIOS                  | AMI EFI 16 Mbit  |
| 内存     | 技术                    | DDR3 800 MHz (N2600), DDR3 1066 MHz (N2800)  |
|        | 最大容量                  | 4 GB   |
|        | 插槽                    | 1 x 204-pin SODIMM   |
| 显示     | Chipset               | Intel Atom N2600/ N2800  |
|        | 图形引擎                  | DirectX 9 and OpenGL3.0 support<br>H/W Decode/Acceleration: H.264, VC1, MPEG2  |
|        | LVDS                  | 18/24-bit LVDS1: up to 1366 x 768  |
|        | VGA                   | Up to 1920 x 1200  |
|        | 双显                    | VGA+LVDS   |
| 以太网    | Speed                 | 10/100/1000Mbps  |
|        | 控制器                   | GbE1 Intel 82583V  |
| Audio  | Chipset               | Realtek ALC892, High Definition Audio (HD), Line-in, Line out  |
| 看门狗定时器 |                       | 输出 System reset, Programmable counter from 1 ~ 255 minutes/ seconds  |
| 存储     | mSATA                 | 1 (Supports mSATA or USB 接口 module or full size miniPCIe, selected by BIOS, default is mSATA)                          |
|        | SATA                  | 1 x SATA II (Max. Data Transfer Rate 300 MB/s)   |
| 扩展     | Mini PCI Express      | 1 x Full-size Mini PCIe (Supports mSATA, selected by BIOS)   |
|        | MIOe                  | MIOe (3 x USB 2.0, 2 x PCIe x1, LPC, HD Audio line-out, SMBus, DP or HDMI supported by request, 5 Vsb/12 Vsb Power 输出) |
|        | 64pin connector A     | 12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED   |
|        | 64pin connector B     | SMBus, I <sup>2</sup> C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line in/out, 2 x RS-232   |
| 电源     | 电源类型                  | Single 12V DC power input  |
|        | 电源电压                  | Supports single 12V input, ± 10%   |
|        | 外围设备电压总输出             | 5V @ 3A for CPU board and MIOe module totally, 12V @ 2A for MIOe module  |
|        | 功耗 (Typical)          | N2600: 0.43 A @ 12 V (5.24 W)<br>N2800: 0.51 A @ 12 V (6.12 W)   |
|        | 功耗 (Max, test in HCT) | N2600: 0.67 A @ 12 V (8.05 W)<br>N2800: 0.82 A @ 12 V (9.8 W)  |
|        | 电源管理                  | APM, ACPI, wake on LAN   |
|        | 电池                    | 3 V / 210 mA   |
| 环境     | 工作                    | 0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)  |
|        | 非工作                   | -40° C ~ 85° C and 60° C @ 95% RH non-condensing   |
| 物理特性   | 尺寸 (L x W)            | 100 x 72 mm (3.9" x 2.8")  |
|        | 重量                    | 0.37 kg (0.82 lb), weight of total package   |
|        | 总重                    | Top Side: 12.75 mm; Bottom Side: 9.0 mm  |

### 结构图



### 订货信息

| 料号                | CPU                    | L2 Cache | Memory     | LVDS      | VGA | DP/HDMI | GbE | HD Audio | USB2.0 | RS-232 | SATAII | Mini PCIe* | Thermal Solution | 工作温度      |
|-------------------|------------------------|----------|------------|-----------|-----|---------|-----|----------|--------|--------|--------|------------|------------------|-----------|
| MIO-2262N-S6A1E   | Intel Atom N2600 1.6G  | 1MB L2   | SO-SIMM    | 18/24-bit | Yes | Yes     | 1   | Yes      | 4      | 2      | 1      | Full-size  | Passive          | 0 ~ 60° C |
| MIO-2262N-S8A1E   | Intel Atom N2800 1.86G | 1MB L2   | SO-SIMM    | 18/24-bit | Yes | Yes     | 1   | Yes      | 4      | 2      | 1      | Full-size  | Passive          | 0 ~ 60° C |
| MIO-2262Z-2GS6A1E | Intel Atom N2600 1.6G  | 1MB      | 2GB bundle | 18/24-bit | Yes | Yes     | 1   | Yes      | 4      | 2      | 1      | Full-size  | Passive          | 0 ~ 60° C |
| MIO-2262Z-2GS8A1E | Intel Atom N2800 1.86G | 1MB      | 2GB bundle | 18/24-bit | Yes | Yes     | 1   | Yes      | 4      | 2      | 1      | Full-size  | Passive          | 0 ~ 60° C |

\* Full-size Mini PCIe supports mSATA  
 Note: Passive = fanless; Active = with fan

### 装箱单

| 料号             | 描述   | 数量 |
|----------------|--|----|
|                | MIO-2262 SBC<br>Startup Manual   |    |
| 1700006291     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90  | 1  |
| 9666226200E    | Screw and stud pack (2 screw for Mini PCIe,<br>4 M3 studs and screws for heatsink) | 1  |
| 1960055792T001 | Heatsink (99.5 x 70.5 x 15.7 mm)   | 1  |

### 可选配件

| 料号                | 描述  |
|-------------------|---|
| 1960055791T001    | MIO-2261 Heat spreader (99.5 x 70.5 x 15.7mm) |
| MIOE-DB2000-00A1E | MIO-2262 Evaluation Board                     |

### Embedded OS/API

| Embedded OS/API | 描述   |
|-----------------|--|
| 2070011765      | WES7E 32bits EN/DE/JP/TC                   |
| 2070011766      | WES7P 32bits EN/TC/SC/RU/FR/DE/ES/IT/JP/KR |
| WinCE 7.0       | CE 7.0                                     |
| Win XPE         | WES 2009                                   |
| Linux           | Ubuntu 12.04                               |
| Software API    | SUSI V3.0                                  |

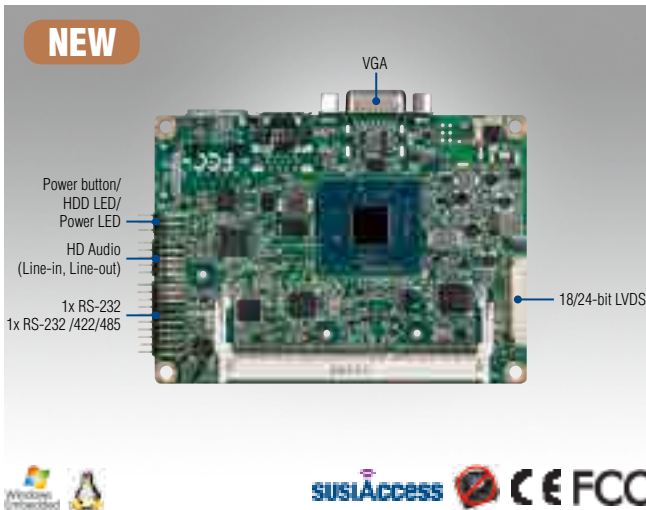
### 底面视图





# MIO-2263

Intel® Atom™ SoC E3825/ J1900 Pico-ITX SBC, DDR3L, 24-bit LVDS, VGA or HDMI, 1GbE, Half-size Mini PCIe, 4 USB, 2 COM, SMBus, I<sup>2</sup>C, mSATA & MIOe



## 特点

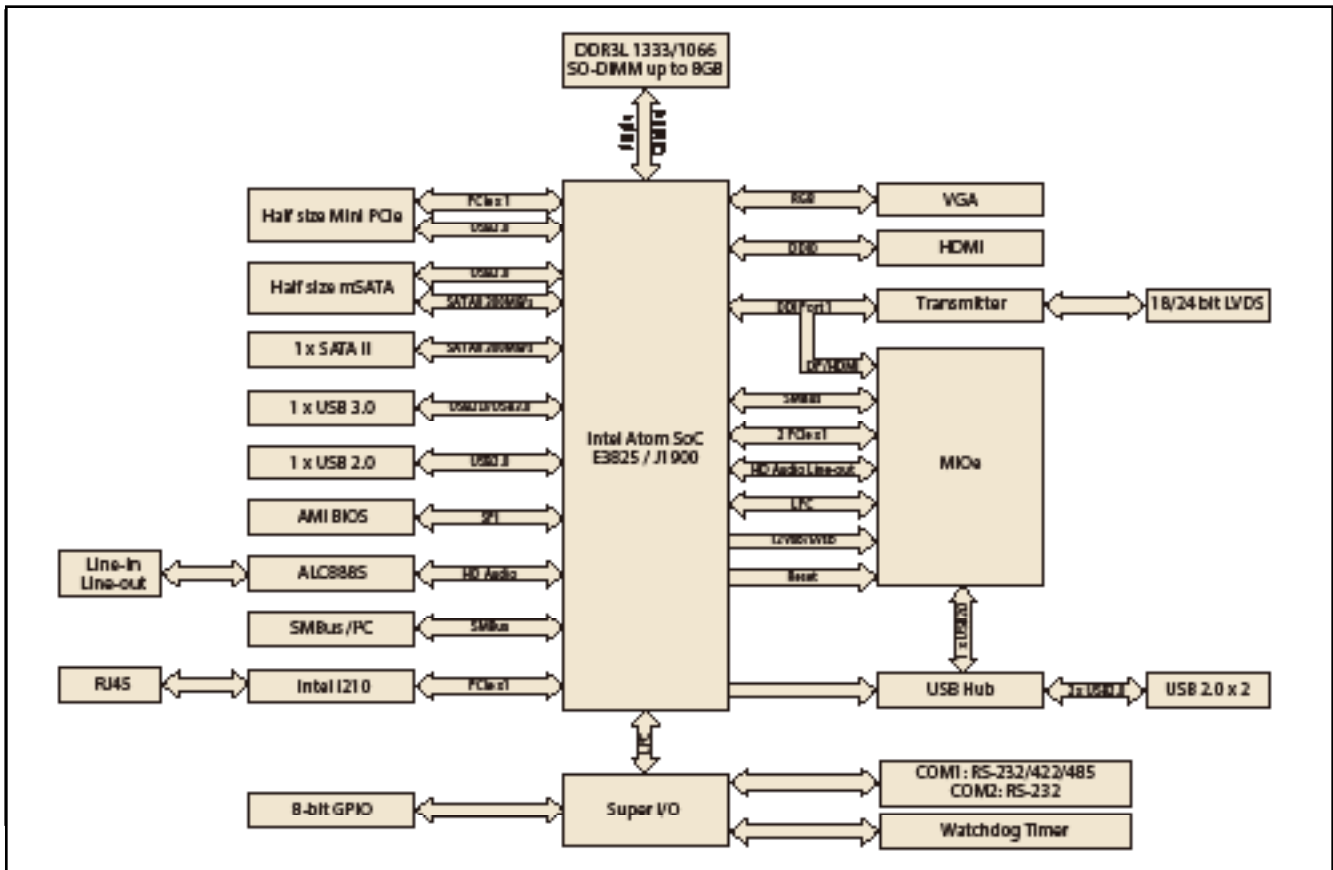
- 嵌入式Intel Atom SoC双核E3825 &四核Celeron J1900处理器, 最高支持8GB DDR3L 1333MHz内存
- 双独立显示: 24-bit LVDS + VGA或24-bit LVDS + HDMI, 支持Intel Gen 7 DirectX@11.1
- 具有MIOe扩展端口, 可实现I/O弹性灵活扩展
- 丰富的I/O接口: 1个Intel GbE网口, 2个COM端口, 1个SATA接口, 1个USB 3.0 接口, GPIO, SMBus, mSATA和Mini-PCIe扩展接口
- 支持SUSIAccess, 提供嵌入式软件API &开发工具



## 规格

|        |  |   |                      |
|--------|--|---|----------------------|
| 处理器系统  | CPU  | Intel Celeron J1900   | Intel Atom E3825     |
|        | Frequency  | 2.0 GHz (Quad-Core)   | 1.33 GHz (Dual-Core) |
|        | L2 Cache   | 2 MB  | 1 MB                 |
|        | Max Turbo Frequency                                      | 2.42 GHz  | -                    |
|        | 系统芯片   | Intel Atom SoC processor integrated   | -                    |
|        | BIOS   | AMI EFI 64 Mbit   | -                    |
| 内存     | 技术   | DDR3L 1333 MHz for J1900<br>DDR3L 1066 MHz for E3825  |                      |
|        | 最大容量<br>插槽   | 8 GB<br>1 x 204-pin SODIMM (Support 1.35V DDR3L)  |                      |
| 显示     | Chipset  | Intel® Atom SoC integrated  |                      |
|        | 图形处理器  | DirectX®11, Open GL3.0/ Open CL 1.1, OGL ES 2.0<br>Encode: H264, MPEG2/4, VC1, WMV9<br>Decode: H264, MPEG2                                    |                      |
|        | LVDS   | Supports single channel 24-bit LVDS<br>Resolution: 1440 x 900 at 60Hz   |                      |
|        | VGA  | Supports 2560 x 1600 at 60Hz  |                      |
|        | HDMI   | Supports 1920 x 1200 at 60 Hz, supported by request   |                      |
| 双显     | Yes (VGA+LVDS or HDMI+LVDS)                              |   |                      |
| 以太网    | 速度<br>控制器  | 10/100/1000 Mbps<br>Intel i210  |                      |
| Audio  | Connector  | RJ45 on rear I/O  |                      |
| 看门狗定时器 | Chipset  | Realtek ALC-888S, High Definition Audio (HD), Line-in, Line-out   |                      |
| 存储     | 输出系统重置, Programmable counter from 1~255 minutes/ seconds |   |                      |
| 外部 I/O | mSATA  | 1 x half size mini PCIe slot (Integrates USB signal, supports either mSATA or USB interface module)   |                      |
|        | SATA   | 1, up to 3Gb/s (300MB/s)  |                      |
|        | Ethernet   | 1   |                      |
|        | VGA  | 1   |                      |
|        | USB  | 1 x USB 3.0 compatible with USB 2.0<br>1 x USB 2.0  |                      |
| 内部 I/O | DC Power Jack*   | 1   |                      |
|        | USB  | 2 x USB 2.0   |                      |
|        | Serial   | 1 x RS-232 from COM2 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)<br>1 x RS-232/422/485 from COM1 with auto-flow control          |                      |
|        | I <sup>2</sup> C*  | 1 (Share with SMBus pin, supported by request)  |                      |
|        | SMBus  | 1   |                      |
| 扩展     | GPIO   | 8-bit general purpose input/ output   |                      |
|        | Mini PCI Express   | 1 x Half-size   |                      |
|        | MIOe   | SMBus, 1 x USB2.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset                                       |                      |
| 电源     | 电源类型   | Single 12V DC power input (Supports DC power hot plug)  |                      |
|        | 电源电压   | Supports single 12V input, ±10%   |                      |
|        | Total peripheral power supply output                     | 5V @ 3A for CPU board and MIOe module totally, 12V @ 2A for MIOe module   |                      |
|        | 功耗(典型)   | J1900: 0.86A @12V ( 10.59W)<br>E3825: 0.59A @ 12V (7.08W)   |                      |
|        | 功耗(最大, 通过HCT测试)  | J1900: 1.04A @12V ( 12.48W)<br>E3825: 0.76A @ 12V (9.12W)   |                      |
|        | 电源管理   | ACPI  |                      |
| 环境     | 电池   | 3V/ 210mAH  |                      |
|        | 工作<br>非工作  | 0 ~ 60° C with air flow 0.7m/s (32 ~ 140° F) (工作 humidity: 40° C @ 95% RH Non-Condensing)<br>-40° C ~ 85° C and 60° C @ 95% RH non-condensing |                      |
| 物理特性   | 尺寸 (L x W)   | 100 x 72 mm (3.9" x 2.8")   |                      |
|        | 重量   | 0.46 kg (1.01 lb), weight of total package  |                      |
|        | 高度   | 33.63 mm  |                      |

\* DC Power jack support by request



### 订货信息

| 料号                 | CPU               | L2 Cache | Memory  | LVDS   | VGA | HDMI | Audio | RS-232 | RS-232/422/485 | USB 3.0 | USB 2.0 | mSATA | SATA II | MIOe | Mini PCIe | Thermal solution | Operating Temp |
|--------------------|-------------------|----------|---------|--------|-----|------|-------|--------|----------------|---------|---------|-------|---------|------|-----------|------------------|----------------|
| MIO-2263E-S3A1E    | E3825<br>1.33 GHz | 1MB      | SO-DIMM | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | 0 ~ 60° C      |
| MIO-2263J-U0A1E    | J1900<br>2.0 GHz  | 2MB      | SO-DIMM | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | 0 ~ 60° C      |
| MIO-2263JH-U0A1E   | J1900<br>2.0 GHz  | 2MB      | SO-DIMM | 24-bit | -   | Yes  | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | 0 ~ 60° C      |
| MIO-2263EZ-2GS3A1E | E3825<br>1.33 GHz | 1MB      | SO-DIMM | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | -20 ~ 80° C    |
| MIO-2263EZ22GS3A1E | E3825<br>1.33 GHz | 1MB      | SO-DIMM | 24-bit | Yes | -    | Yes   | 1      | 1              | 1       | 3       | Yes   | 1       | Yes  | Half-size | Passive          | -40 ~ 85° C    |

\* Default BIOS supports 64 bits OS installation, BIOS for 32 bits OS installation is supported by project.

### 装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
|                | MIO-2263 SBC  | 1  |
|                | Startup Manual  | 1  |
| 1700006291     | SATA cable 30cm   | 1  |
| 1700019656     | SATA power cable 5P-1.25/5P-2.0+SATA 5P 15 cm                                     | 1  |
| 1701200220     | RS-232 x 2 ports 2.0mm pitch 22cm   | 1  |
| 1700022444-01  | Audio cable 2.0 mm pitch 20 cm (line-in & line-out)                               | 1  |
| 1700002172     | USB cable 2.0 mm pitch USB-A(F) 17 cm   | 1  |
| 1700019705     | AT power cable 12 cm  | 1  |
| 9666226300E    | Screw and stud pack (2 screw for Mini PCIe, 4 x M3 studs and screws for heatsink) | 1  |
| 1960063455T001 | CPU heatsink for MIO-2263   | 1  |

### 可选配件

| 料号             | 描述  |
|----------------|---|
| 1960065074N001 | MIO-2263 Heat spreader ( 99.5 x 70.5 x 11.2 mm) |

### Embedded OS/API

| Embedded OS/API | 料号         | 描述                                     |
|-----------------|------------|--|
| WES8            | TBD        | WES8E ENG                              |
| WES7            | 2070012999 | WES7E MIO-2263 x64 V5.6.8 US/ CN/TW/JP |
| WEC7            | TBD        | CE7.0 ENG                              |
| VxWorks         |            | 6.9                                    |
| Linux           |            | Ubuntu V13.10                          |
| Software        |            | SUSI V4.0                              |

### 后部I/O视图



MIO-2263E-S3A1E  
MIO-2263J-U0A1E



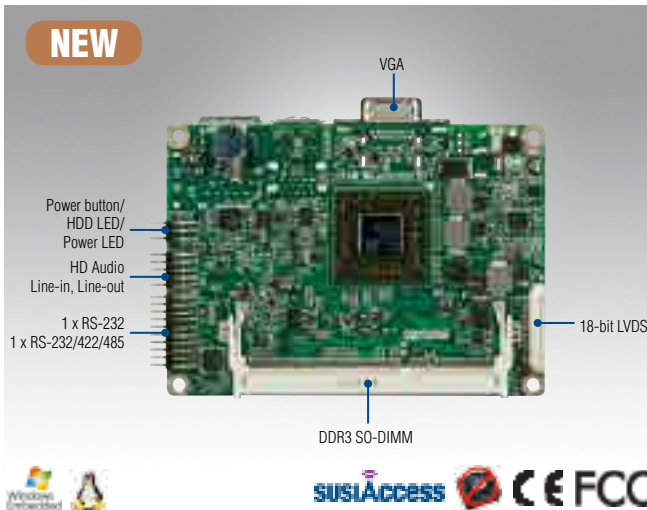
MIO-2263JH-U0A1E



MIO-2263 w/DC Jack (by request)

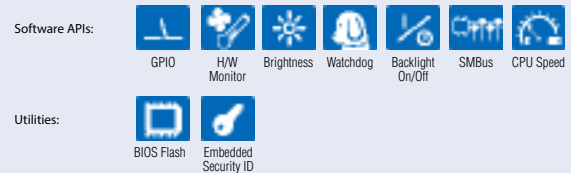
# MIO-2270

AMD® G-Series SoC GX-415GA/ GX-210JA  
Pico-ITX SBC, DDR3, 18-bit LVDS, VGA or  
HDMI, 1GbE, Half-size Mini PCIe, 4 USB,  
2COM, SMBus, mSATA & MIOe



## 特点

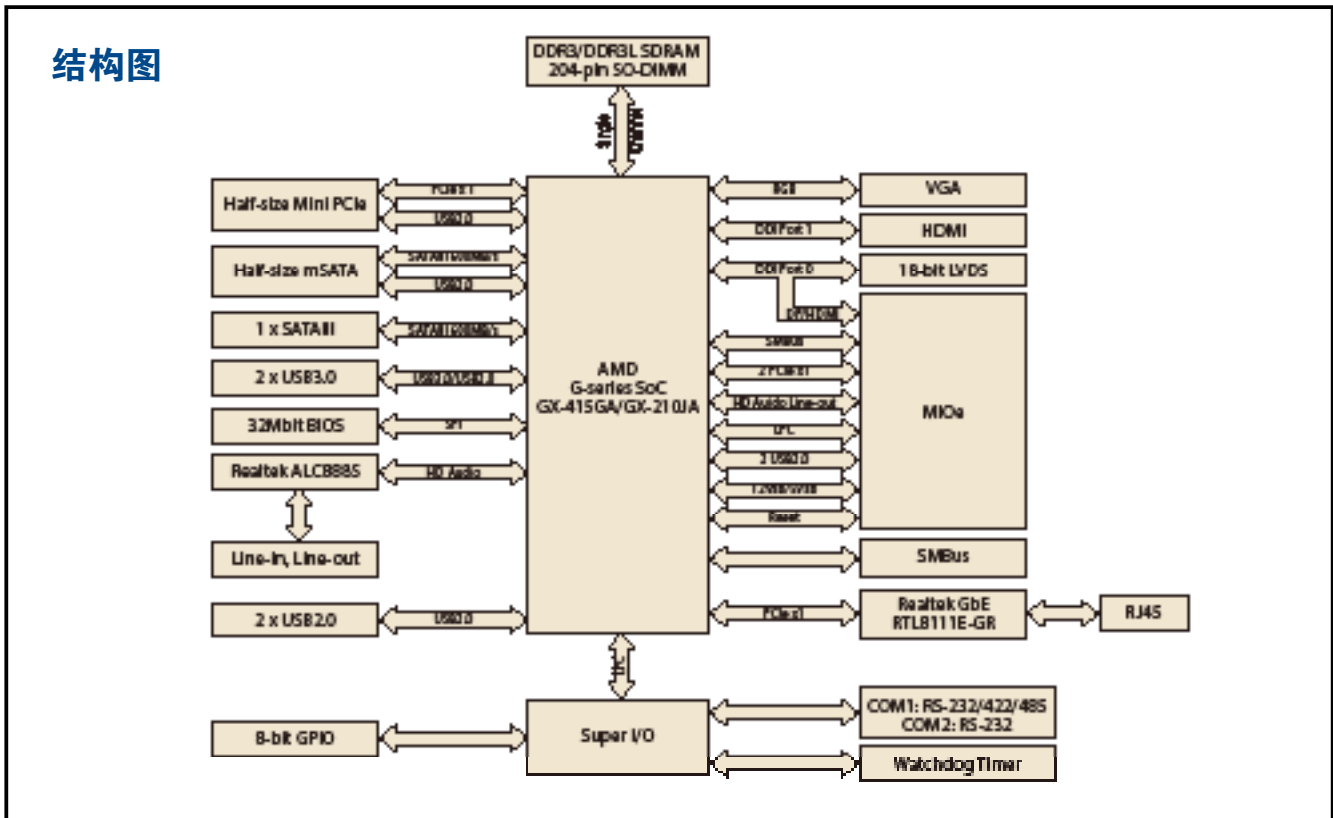
- 嵌入式AMD® G-Series SoC GX-415GA/ GX-210JA处理器，最高支持8GB DDR3/DDR3L内存
- 双独立显示：18-bit LVDS + VGA或18-bit LVDS + HDMI，支持Intel Gen 7 DirectX®11.1
- 具有MIOe扩展端口，可实现I/O弹性灵活扩展
- 丰富的I/O接口：1个Intel GbE网口，2个COM端口，1个SATA接口，2个USB 3.0接口，GPIO，SMBus，mSATA和Mini-PCIe扩展接口
- 支持SUSIAccess，提供嵌入式软件API &开发工具



## 规格

|        | AMD® G-Series SoC GX-415GA           | AMD® G-Series SoC GX-210JA  |
|--------|--------------------------------------|---|
| 处理器系统  | CPU                                  | AMD® G-Series SoC GX-415GA  |
|        | Frequency                            | Quad-Core 1.5 GHz   |
|        | L2 Chche                             | 2 MB  |
|        | System Chipset                       | AMD® G series SoC processor integrated  |
|        | BIOS                                 | AMI EFI 32 Mbit   |
| 内存     | 技术                                   | DDR3/ DDR3L 1600 MHz  |
|        | 最大容量                                 | 8 GB  |
| 显示     | 插槽                                   | 1 x 204-pin SODIMM (Support 1.5V DDR3 and 1.35V DDR3L)  |
|        | Chipset                              | AMD® G series SoC   |
|        | 图形处理器                                | DirectX®11.1 graphic with UVD4.2, Open GL4.1/ Open Cl 1.2<br>2D/ 3D Acceleration, Motion Video Acceleration<br>Hardware decode (UVD) for H.264, MPEG2/4, VC1, MVC<br>Graphic engine HD 8330E for GX-415GA, HD 8180 for GX-210JA |
|        | LVDS                                 | Supports single channel 18-bit LVDS<br>Resolution: 1600 x 900 at 60 Hz/ 18bpp   |
|        | VGA                                  | Up to 2048x1536 at 60Hz   |
|        | HDMI                                 | Supports 1920x1200 at 60 Hz/ 24bpp  |
|        | 双显                                   | Yes (VGA+LVDS or HDMI+LVDS)   |
| 以太网    | 速度                                   | 10/100/1000 Mbps  |
|        | 控制器                                  | GbE Realtek RTL8111E 10/100/1000 Mbps   |
|        | 连接器                                  | RJ45 on rear I/O  |
| Audio  | Chipset                              | Realtek ALC888S, High Definition Audio (HD), Line-in, Line-out  |
| 看门狗定时器 |                                      | Output system reset, Programmable counter from 1~255 minutes/ seconds   |
| 存储     | mSATA                                | 1 x half size mini PCIe slot (Integrates USB signal, supports either mSATA or USB interface module)   |
|        | SATA                                 | 1 x SATA III (Max. Data Transfer Tate 600MB/s) support 5V HDD only  |
| 外部 I/O | 以太网                                  | 1 (10/100/1000 Mbps)  |
|        | VGA                                  | 1   |
|        | USB                                  | 2 x USB 3.0 compatible with USB 2.0   |
|        | DC Power Jack                        | 1 (Support by request)  |
|        | USB                                  | 2 x USB 2.0   |
| 内部 I/O | Serial                               | 1 x RS-232 from COM2 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)<br>1 x RS-232/422/485 from COM1 with auto-flow control  |
|        | SMBus                                | 1   |
|        | GPIO                                 | 8-bit general purpose input/ output   |
|        | Mini PCI Express                     | 1 x Half-size   |
| 扩展     | MIOe                                 | SMBus, 2 x USB2.0, LPC, 2 x PCIe x1, line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset   |
|        | 电源类型                                 | Single 12V DC power input (Supports DC power hot plug)  |
| 电源     | 电源电压                                 | Supports single 12V input, ±10%   |
|        | Total Peripheral power supply output | 5V @ 3A for CPU board and MIOe module totally, 12V @ 2A for MIOe module   |
|        | 功耗(典型)                               | MIO-2270QH-S5A1E: w/ DDR3 1.05A @ 12V (12.6W), w/ DDR3L 1.02A @ 12V (12.24W)  |
|        | 功耗(最大, 通过HCT测试)                      | MIO-2270QH-S5A1E: w/ DDR3 1.26A @ 12V (15.12W), w/ DDR3L 1.21A @ 12V (14.52W)   |
|        | 电源管理                                 | ACPI  |
|        | 电池                                   | 3V/ 210mAH  |
|        | 环境                                   | 工作  |
| 物理特性   | 尺寸 (L x W)                           | -40° C ~ 85° C and 60° C @ 95% RH non-condensing  |
|        | 尺寸 (L x W)                           | 100 x 72 mm (3.9" x 2.8")   |
|        | 重量                                   | 0.45 kg (0.99 lb), weight of tatal package  |
|        | 总高                                   | 33.65 mm  |

结构图



订货信息

| 料号               | CPU                    | L2 Cache | Memory  | LVDS   | VGA | HDMI | Audio | RS-232 | RS-232/422/485 | USB 3.0 | USB 2.0 | mSATA | SATA III | MIOe | Mini PCIe | Thermal solution | Operating Temp |
|------------------|------------------------|----------|---------|--------|-----|------|-------|--------|----------------|---------|---------|-------|----------|------|-----------|------------------|----------------|
| MIO-2270QV-S5A1E | GX-415GA, 1.5 GHz, 15W | 2MB      | SO-DIMM | 18-bit | Yes | -    | Yes   | 1      | 1              | 2       | 2       | Yes   | 1        | Yes  | Half-size | Active           | 0-60°C         |
| MIO-2270QH-S5A1E | GX-415GA, 1.5 GHz, 15W | 2MB      | SO-DIMM | 18-bit | -   | Yes  | Yes   | 1      | 1              | 2       | 2       | Yes   | 1        | Yes  | Half-size | Active           | 0-60°C         |
| MIO-2270DV-S0A1E | GX-210JA, 1.0 GHz, 6W  | 1MB      | SO-DIMM | 18-bit | Yes | -    | Yes   | 1      | 1              | 2       | 2       | Yes   | 1        | Yes  | Half-size | Passive          | 0-60°C         |
| MIO-2270DH-S0A1E | GX-210JA, 1.0 GHz, 6W  | 1MB      | SO-DIMM | 18-bit | -   | Yes  | Yes   | 1      | 1              | 2       | 2       | Yes   | 1        | Yes  | Half-size | Passive          | 0-60°C         |

装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
|                | MIO-2270 SBC  | 1  |
|                | Startup Manual  | 1  |
| 1700006291     | SATA cable 30cm   | 1  |
| 1700019656     | SATA power cable 5P-1.25/5P-2.0+SATA 5P 15 cm                                   | 1  |
| 1701200220     | RS-232 x 2 ports 2.0mm pitch 22cm   | 1  |
| 1700022444-01  | Audio cable 2.0 mm pitch 20 cm (line-in & line-out)                             | 1  |
| 1700002172     | USB cable 2.0 mm pitch USB-A(F) 17 cm   | 1  |
| 1700019705     | AT power cable 12 cm  | 1  |
| 9666226300E    | Screw and stud pack (2 screw for Mini PCIe, 4 M3 studs and screws for heatsink) | 1  |
| 1960063062T001 | CPU cooler for MIO-2270QV/QH  | 1  |
| 1960063455T011 | CPU Heatsink for MIO-2270DV/DH  | 1  |

可选配件

| 料号             | 描述   |
|----------------|--|
| 1960065075N001 | MIO-2270 Heat spreader (99.5x70.5x11.2 mm) |

Embedded OS/API

| Embedded OS/API | 料号         | 描述                           |
|-----------------|------------|------------------------------|
| Win CE          | 2070013053 | CE7.0 ENG                    |
| WES             | 2070012828 | WES2009 X32 V4.5 MUI24       |
|                 | 2070012881 | WES7E X64 V5.6.7 EN/TC/SC/JP |
| Linux           | TBD        | Ubuntu 13.04                 |
| Software        | TBD        | SUSI V3.0                    |

后部I/O视图



MIO-2270QV-S5A1E  
MIO-2270DV-S0A1E



MIO-2270QH-S5A1E  
MIO-2270DH-S0A1E



MIO-2270 w/ DC Jack (by request)



# MIO-3260

Intel® Atom™ E3825 & Celeron® N2930  
Pico-ITX SBC, DDR3L, 18/24-bit LVDS, VGA,  
DP/HDMI, 1 GbE, Full-size Mini PCIe,  
4 USB, 2 COM, SMBus, I<sup>2</sup>C, mSATA & MIOe

NEW



18/24 bit LVDS

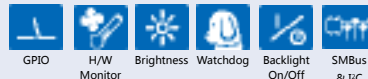
DDR3L SO-DIMM Socket



## 特点

- Embedded Intel® Atom™ E3825 & Celeron® N2930 up to Quad-Core 处理器设计, DDR3L 1333MHz 最高支持 8GB
- 支持 Intel Gen 7 DirectX® 11.1, Dual Independent display: 18/24bit LVDS, VGA, DP/HDMI
- Flexible design using integrated multiple I/O: MIOe to approach vertical applications & keep domain knowhow
- Intel GbE support, Rich I/O interface with 2 COM, 1 SATA, 4 USB 2.0, GPIO, SMBus, I<sup>2</sup>C, and MIOe expansion interface
- 支持 iManager, 嵌入式软件 API 和实用工具

Software APIs:



Utilities:



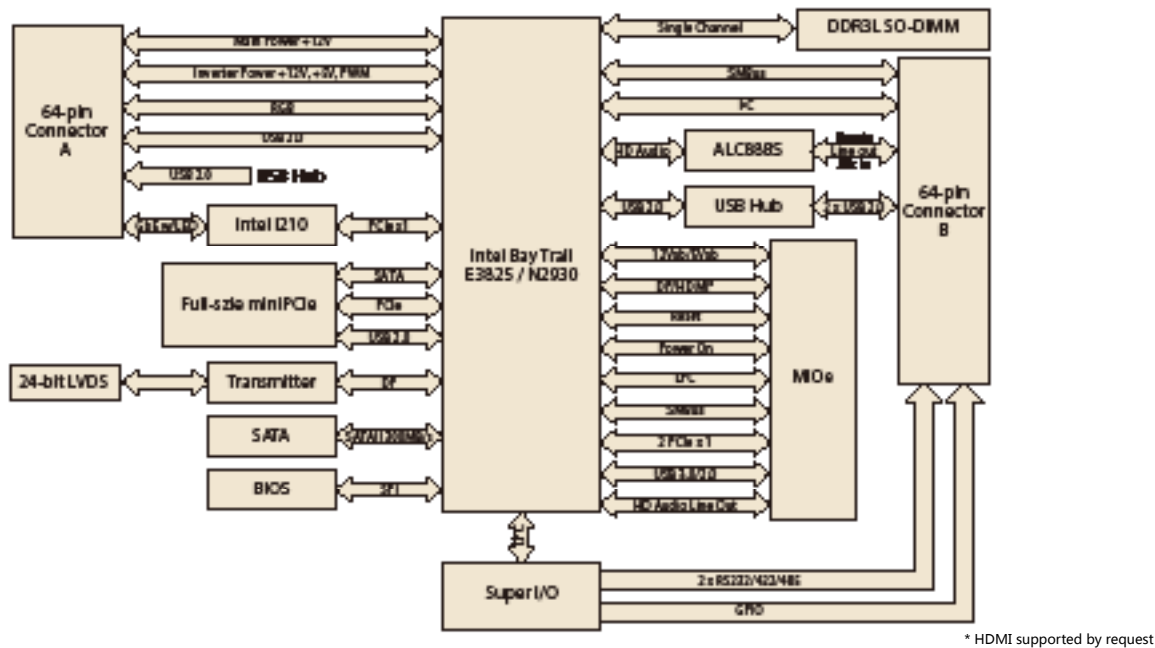
## 规格

|        |                                      |  |                      |
|--------|--------------------------------------|--|----------------------|
| 处理器系统  | CPU                                  | Intel Atom E3825   | Intel Celeron N2930  |
|        | Frequency                            | 1.33 GHz (Dual-Core)   | 1.83 GHz (Quad-Core) |
|        | L2 Cache                             | 1 MB   | 2 MB                 |
|        | Max Turbo Frequency                  | -  | 2.16GHz              |
|        | System Chipset                       | Intel Atom SoC processor integrated  |                      |
|        | BIOS                                 | AMI EFI 64 Mbit  |                      |
| 内存     | 技术                                   | DDR3L 1333 MHz for N2930, DDR3L 1066 MHz for E3825   |                      |
|        | 最大容量                                 | 8 GB   |                      |
|        | 插槽                                   | 1 x 204-pin SODIMM (Support 1.35V DDR3L)   |                      |
| 显示     | Chipset                              | Intel Gen7 graphic engine  |                      |
|        | 图形引擎                                 | DirectX® 11, Open GL 3.0, Open CL 1.1, OGL ES 2.0<br>Encode: H.264, MPEG2<br>Decode: H.264, MPEG2, VC-1, WMV9                      |                      |
|        | LVDS                                 | Supports single channel 24-bit LVDS up to 1440 x 900 at 60Hz   |                      |
|        | VGA                                  | Supports 2560 x 1600 at 60Hz   |                      |
|        | 双显                                   | Yes (LVDS+VGA or LVDS+DP/HDMI or VGA+DP/HDMI)  |                      |
| 以太网    | 速度                                   | 10/100/1000Mbps  |                      |
|        | 控制器                                  | Intel I210   |                      |
| Audio  | Chipset                              | Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in   |                      |
| 看门狗定时器 |                                      | Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds  |                      |
| 存储     | mSATA*                               | 1 (Supports mSATA or USB interface module or full size miniPCIe, selected by BIOS, default is mSATA)                               |                      |
|        | SATA                                 | 1, up to 3Gb/s (300MB/s)   |                      |
| 扩展     | Mini PCI Express                     | 1 x Full-size  |                      |
|        | MIOe                                 | SMBus, USB3.0, LPC, 2 x PCIe x1, Line out, DisplayPort/HDMI*, +5 Vsb/+12 Vsb power, Power On, Reset                                |                      |
|        | 64-pin connector A                   | 12V DC input, Inverter, VGA, 2 x USB2.0, 1GbE w/ LED**   |                      |
|        | 64-pin connector B                   | SMBus, I <sup>2</sup> C, Power/Reset button, HDD/Power LED, 2 x USB2.0, 8-bit GPIO, HD Audio Line-in, Line out, Mic-in, 2 x RS-232 |                      |
| 电源     | 电源类型                                 | Single 12V DC power input  |                      |
|        | 电源电压                                 | Supports single 12V input, ± 10%   |                      |
|        | Total peripheral power supply output | 5V @ 3A for CPU board and MIOe module totally, 12V @ 2A for MIOe module  |                      |
|        | 功耗 (Typical)                         | MIO-3260L-S3A1E(E3825): 4.47W<br>MIO-3260L-S8A1E(N2930): 5.08W<br>MIO-3260C-S8A1E(N2930): 4.22W                                    |                      |
|        | 功耗 (Max, test in HCT)                | MIO-3260L-S3A1E(E3825): 7.13W<br>MIO-3260L-S8A1E(N2930): 9.73W<br>MIO-3260C-S8A1E(N2930): 8.71W                                    |                      |
|        | 电源管理                                 | ACPI   |                      |
| 环境     | 电池                                   | 3 V / 210 mAH  |                      |
|        | 工作                                   | 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)  |                      |
|        | 非工作                                  | -40° C ~ 85° C and 60° C @ 95% RH non-condensing   |                      |
| 物理特性   | 尺寸 (L x W)                           | 100 x 72 mm (3.9" x 2.8")  |                      |
|        | 重量                                   | MIO-3260L: 0.35 kg (0.77 lb), MIO-3260C: 0.55 kg (1.21 lb), weight of total package  |                      |
|        | 总高                                   | Top Side: 15.7 mm (including heatsink); Bottom Side: 8.5 mm; PCB: 1.6 mm   |                      |

\* The specification is supported by request

\*\* MIO-3260C default support GbE only. GbE w/LED is supported by request.

结构图



订货信息

| 料号                 | CPU                       | L2 Cache | Memory     | LVDS      | VGA | GbE | HD Audio | USB 2.0 | RS-232/422/485 | SATAII | Mini PCIe* | MIOe | Connector Type | Thermal Solution | Operational Temp. |
|--------------------|---------------------------|----------|------------|-----------|-----|-----|----------|---------|----------------|--------|------------|------|----------------|------------------|-------------------|
| MIO-3260L-S3A1E    | Intel Atom E3825 1.33G    | 1MB      | SO-DIMM    | 18/24-bit | Yes | 1   | Yes      | 4       | 2              | 1      | Full-size  | Yes  | 64-pin         | Passive          | 0 ~ 60° C         |
| MIO-3260L-S8A1E    | Intel Celeron N2930 1.83G | 2MB      | SO-DIMM    | 18/24-bit | Yes | 1   | Yes      | 4       | 2              | 1      | Full-size  | Yes  | 64-pin         | Passive          | 0 ~ 60° C         |
| MIO-3260C-S8A1E    | Intel Celeron N2930 1.83G | 2MB      | SO-DIMM    | 18/24-bit | Yes | 1   | Yes      | 4       | 2              | 1      | Full-size  | Yes  | Box Wafer      | Passive          | 0 ~ 60° C         |
| MIO-3260LZ22GS3A1E | Intel Atom E3825 1.33G    | 1MB      | 2GB bundle | 18/24-bit | Yes | 1   | Yes      | 4       | 2              | 1      | Full-size  | Yes  | 64-pin         | Passive          | -40 ~ 85° C       |
| MIO-3260LZ22GS8A1E | Intel Atom E3825 1.33G    | 2MB      | 2GB bundle | 18/24-bit | Yes | 1   | Yes      | 4       | 2              | 1      | Full-size  | Yes  | 64-pin         | Passive          | -40 ~ 85° C       |
| MIO-3260CZ22GS8A1E | Intel Celeron N2930 1.83G | 2MB      | 2GB bundle | 18/24-bit | Yes | 1   | Yes      | 4       | 2              | 1      | Full-size  | Yes  | Box Wafer      | Passive          | -40 ~ 85° C       |

\* Full-size Mini PCIe supports mSATA  
 Note1: Default BIOS supports 64 bits OS installation, BIOS for 32 bits OS installation is supported by project.  
 Note2: Passive = fanless; Active = with fan  
 Note3: MIO-3260C with E3825 CPU is supported by request.

装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
| MIO-3260 SBC   | MIO-3260 SBC  | 1  |
| Startup Manual | Startup Manual  | 1  |
| 1700006291     | SATA cable 30cm   | 1  |
| 9666226200E    | Screw and stud pack (2 screw for Mini PCIe, 4 x M3 studs and screws for heatsink) | 1  |
| 9666226300E    | Screw and stud pack (2 screw for Mini PCIe, 4 x M3 studs and screws for heatsink) | 1* |
| 1960063455T001 | Heatsink (99.5 x 70.5 x 15.7mm)   | 1  |
| 1700023340-01  | Power Cable 2*2P-4.2/2*4P-2.0 10cm  | 1* |
| 1700023339-01  | Inverter and SATA power Cable 2*3P-2.0/1*5P-1.25 15cm                             | 1* |
| 1700023341-01  | VGA Cable 15P(F)/2*6P-2.0 15CM  | 1* |
| 1700019000     | USB Cable 2*5P-2.0/USB-A(F)*2 w/Bracket 26CM w/ Locked                            | 1* |
| 1700002172     | USB Cable 2*5P-2.0/USB-A(F) 17CM  | 1* |
| 1700019001     | LAN Cable RJ-45/2*5P-2.0 15cm w/locked  | 1* |
| 1700019584     | Audio Cable 2*5P-2.0/Audio JACK*3 20cm  | 1* |
| 1701200220     | COM Cable 2*10P-2.0/D-SUB 9P(M)*2 22CM  | 1* |

\* Only for MIO-3260C-S8A1E

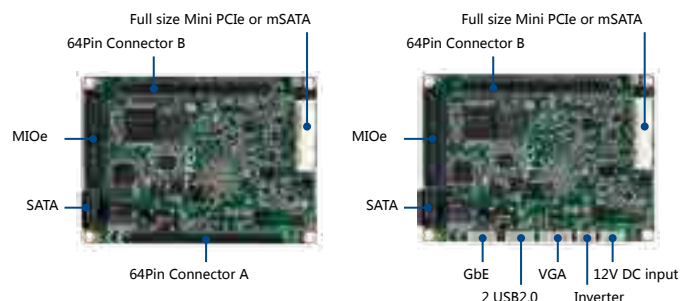
可选配件

| 料号                | 描述                                      |
|-------------------|---|
| 1960065074N001    | Heat spreader (99.5 x 70.5 x 11.2mm)    |
| MIOE-DB2100-00A1E | MIO-3260 Evaluation Board               |
| 1700024079-01     | LAN w/LED cable RJ45-8P8C/2*7P-2.0 15cm |

Embedded OS/API

| Embedded OS/API | 料号         | 描述  |
|-----------------|------------|---|
| WES8            | 2070013532 | WES8 MIO-3260 X64 V6.5.2 Eng/Cht/Chs/Jpn  |
| WES7            | 2070013483 | WES7E MIO-3260 X64 V5.6.8 Eng/Cht/Chs/Jpn |
| WEC7            | 2070013570 | WEC7 Pro MIO-3260 V1.0 Eng                |
| VxWorks         |            | 6.9                                       |
| Linux           |            | Ubuntu V13.10                             |
| Software API    |            | SUSI V4.0                                 |

Bottom Side View

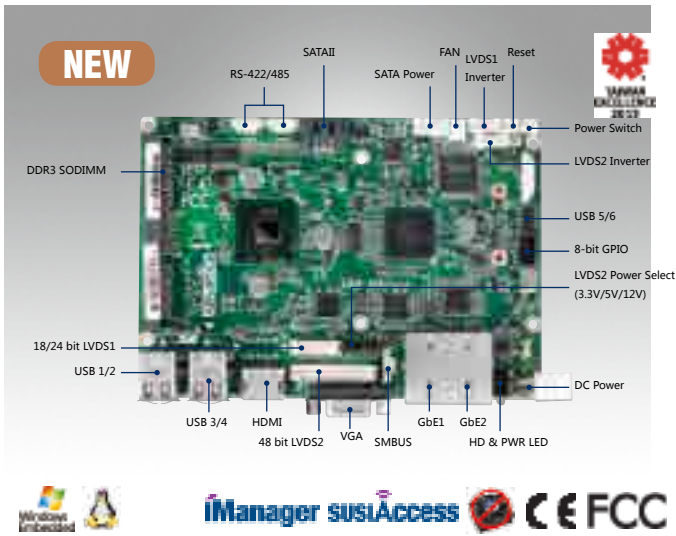


MIO-3260L-S3A1E  
MIO-3260L-S8A1E

MIO-3260C-S8A1E

# MIO-5250

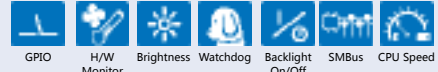
Intel® Atom™ N2600/ D2550, 3.5" MI/O-Compact SBC, DDR3, HDMI, Dual LVDS, VGA, 2 GbE, CFast, iManager, MIOe



## 特点

- 嵌入式 Intel® Atom™ N2600/ D2550双核处理器 + Intel NM10,1个DDR3, 内存最高可达4 GB
- DirectX® 9, 多显示: 18/24-bit LVDS1, 48-bit LVDS2, HDMI, VGA
- 灵活的集成多I/O设计
- 2个GbE网口, 高清音频, 丰富的I/O接口, 包括4个COM端口, 1个SATA接口, I2C或SMBus, 8-bit GPIO, PCIe Mini Card & CFast
- 支持iManager, 嵌入式软件API和实用工具

Software APIs:

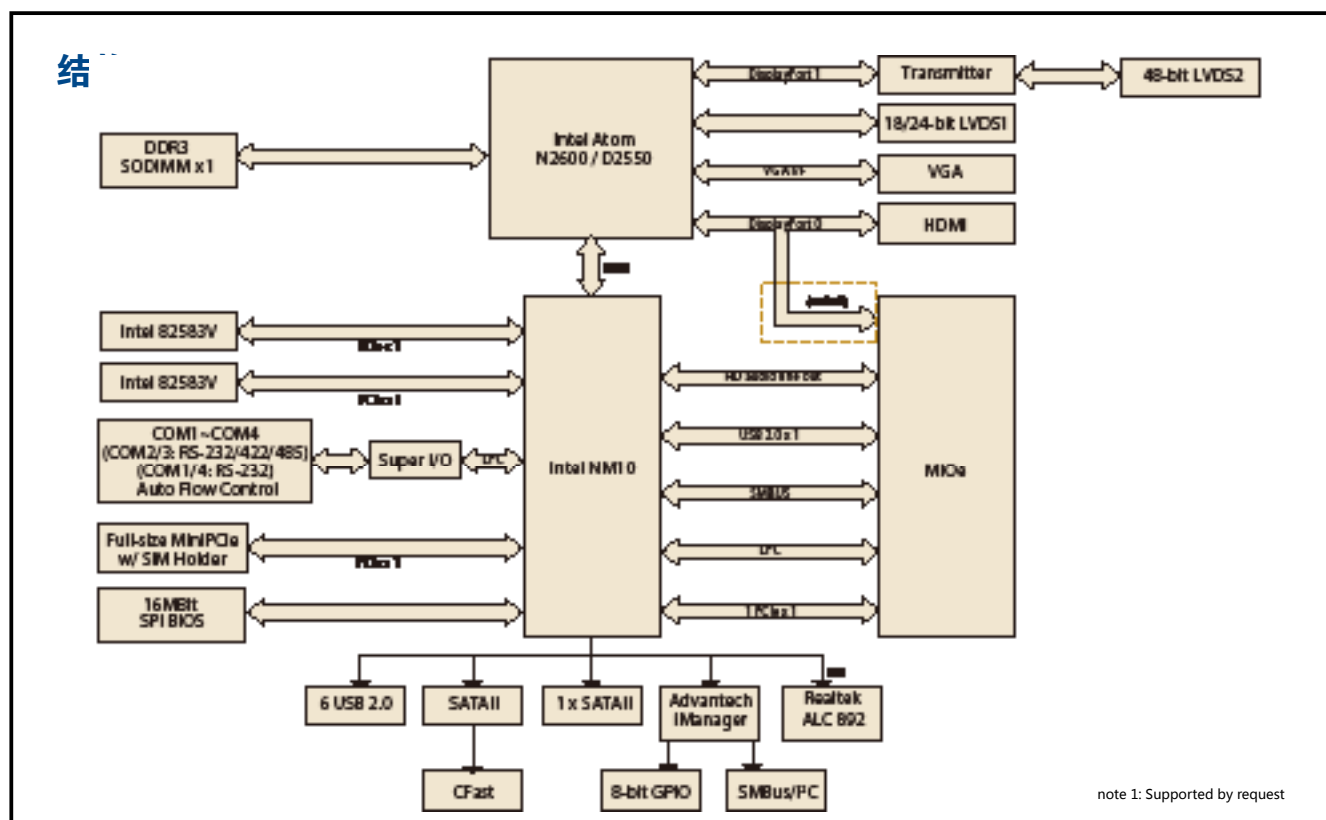


Utilities:



## 规格

|         |                           |   |
|---------|---------------------------|---|
| 处理器系统   | CPU                       | Intel Atom Dual Core processor N2600 1.6GHz/ D2550 1.86GHz  |
|         | Frequency                 | Dual Core 1.6GHz/ 1.86GHz   |
|         | L2 Cache                  | 1MB   |
|         | System Chipset            | Intel Atom N2600/ D2550 + Intel NM10  |
| 内存      | BIOS                      | AMI EFI 16Mbit  |
|         | 技术                        | DDR3 1066MHz (D2550), DDR3-800 (N2600)  |
|         | 最大容量                      | 4 GB  |
| 显示      | 插槽                        | 1 x 204-pin SODIMM  |
|         | Chipset                   | Intel Atom N2600/ D2550   |
|         | 图形引擎                      | DirectX 9 and OpenGL3.0 support<br>Hardware decode H/W acceleration: MPEG2<br>H/W Decode/Acceleration: H.264/ VC1/ WMV9               |
|         | LVDS                      | 18/24-bit LVDS1: up to 1366 x 768 (N2600), 1440 x 900 (D2550)<br>48-bit LVDS2: 2560 x 1600 (only for MIO-5250D-S8A1E)                 |
|         | VGA                       | Up to 1920 x 1200   |
|         | HDMI                      | Supports 1920 x 1200, Max data rate: up to 1.65 Gb/s, Supports HDMI v1.3 Up to 1080p support  |
|         | 双显                        | Yes (VGA + LVDS1 or VGA + HDMI or HDMI + LVDS1 or LVDS1 + LVDS2)  |
| 以太网     | 速度                        | 10/100/1000Mbps   |
|         | 控制器                       | GbE1: Intel 82583V 10/100/1000Mbps, GbE2: Intel 82583V 10/100/1000Mbps  |
|         | 连接器                       | 2 RJ45 on 外部I/O   |
| Audio   | Chipset                   | Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in   |
|         | Amplifier                 | Optional via MIOe   |
| 看门狗定时器  |                           | 255 levels timer 间隔, programmable by software   |
| Storage | CFast                     | 1   |
|         | mSATA                     | (Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)   |
|         | SATA                      | 1 x SATA II (Max. Data Transfer Rate 300 MB/s)  |
| 外部I/O   | Ethernet                  | 2 (10/100/1000Mbps)   |
|         | VGA                       | 1   |
|         | HDMI                      | 1   |
|         | USB                       | 4 x USB 2.0   |
|         | LED                       | Power, HDD  |
|         | DC Jack                   | 1 (MIO-5250N-S6A1E)   |
| 内部I/O   | USB                       | 2 x USB 2.0   |
|         | Serial                    | 2 RS-232 from COM1/4, 2 RS-232/422/485 support auto flow control from COM2/3 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV) |
|         | I <sup>2</sup> C          | 1 (Shares with SMBus pin)   |
|         | SMBus                     | 1 (Shares with I <sup>2</sup> C pin)  |
| 扩展      | GPIO                      | 8-bit general purpose input/output  |
|         | Full-size MiniPCIe/ mSATA | 1 with SIM Holder, supports mSATA via BIOS select   |
| 电源      | MIOe                      | SMBus, 3 x USB2.0, LPC, 1 x PCIe, line out, 5 Vsb/12 Vsb power, ACPI S3/S5, Displayport (optional)                                    |
|         | 电源类型                      | Single 12V DC power input   |
|         | 电源电压                      | Supports single 12V input, ± 10%  |
|         | 功耗 (Typical)              | MIO-5250N-S6A1E: 0.606 A @ 12 V (7.27 W)<br>MIO-5250D-S8A1E: 0.829 A @ 12 V (9.95 W)  |
|         | 功耗 (Max, test in HCT)     | MIO-5250N-S6A1E: 0.729 A @ 12 V (8.75 W)<br>MIO-5250D-S8A1E: 1.029 A @ 12 V (12.35 W)   |
|         | 电源管理                      | ACPI  |
|         | 电池                        | Lithium 3 V / 210 mAh   |
| 环境      | 工作                        | 0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)   |
|         | 非工作                       | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |
| 物理特性    | 尺寸 (L x W)                | 146 x 102 mm (5.7" x 4"), same as 3.5"  |
|         | 重量                        | 0.78 kg (1.72 lb), weight of total package  |
|         | 总高                        | 30.6 mm   |



## 订货信息

| 料号                  | CPU                    | L2 Cache | Memory     | LVDS1  | LVDS2  | VGA & HDMI | GbE | Audio | RS-232/422/485 | RS-232 | USB 2.0 | SATAII | CFast | Mini PCle | MIOe | Power 连接器 | Thermal Solution | 工作 Temp.    |
|---------------------|------------------------|----------|------------|--------|--------|------------|-----|-------|----------------|--------|---------|--------|-------|-----------|------|-----------|------------------|-------------|
| MIO-5250N-S6A1E     | Intel Atom N2600 1.6G  | 1MB      | SO-DIMM    | 24-bit | -      | Yes        | 2   | Yes   | 2              | 2      | 6       | 1      | 1     | 1         | Yes  | DC Jack   | Passive          | 0 ~ 60° C   |
| MIO-5250D-S8A1E     | Intel Atom D2550 1.86G | 1MB      | SO-DIMM    | 24-bit | 48-bit | Yes        | 2   | Yes   | 2              | 2      | 6       | 1      | 1     | 1         | Yes  | 2x2 type  | Passive          | 0 ~ 60° C   |
| MIO-5250NZ-2GS6A1E  | Intel Atom N2600 1.6G  | 1MB      | 2GB bundle | 24-bit | -      | Yes        | 2   | Yes   | 2              | 2      | 6       | 1      | 1     | 1         | Yes  | DC Jack   | Passive          | -20 ~ 80° C |
| MIO-5250NZ2-2GS6A1E | Intel Atom N2600 1.6G  | 1MB      | 2GB bundle | 24-bit | -      | Yes        | 2   | Yes   | 2              | 2      | 6       | 1      | 1     | 1         | Yes  | DC Jack   | Passive          | -40 ~ 85° C |

Note: Passive = fanless; Active = with fan

Note: Wide 温度 range version has been bundled with verified industrial-grade memory module

## 装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
|                | MIO-5250 SBC                                  |    |
|                | Startup Manual                                |    |
|                | Utility CD                                    |    |
| 1700008941     | SATA cable 7P 32CM C=R 180/180D W/ Lock       | 1  |
| 1700018785     | SATA 35cm power cable                         | 1  |
| 1700019435     | COM RS-485 D-SUB 9P (M)/1*5P 1.25 25cm cable  | 2  |
| 1701200220     | COM RS232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 2  |
| 1700019584     | Audio Cable 2*5P-2.0/JACK*3 20cm              | 1  |
| 9689000002     | mini Jumper pack                              | 1  |
| 1960054274T001 | Heatsink 135 x 84.2 x 20 mm for MIO-5250      | 1  |

## 可选配件

| 料号             | 描述   |
|----------------|--|
| 1960054269T001 | Heat spreader for MIO-5250 (137 x 84.2 x 16.7mm)   |
| 1700006291     | SATA2 cable 7P/ 7P 30cm C=R 180/90                 |
| 1703100260     | USB5/6 cable                                       |
| 1910002088     | The Post Standoff, F= M3*6L, M=M3*5L, B=5, H=16 Ni |
| 1757003082     | Adaptor 100-240V 60W 12V 5A W/O PFC                |

## Embedded OS/API

| Embedded OS/API | 描述                              |
|-----------------|---------------------------------|
| WinCE 7.0       | CE 7.0                          |
| Win XPE         | WES 2009                        |
| 2070011152      | WES7E SP1 x32 MIO-5250 V5.1 ENG |
| Linux           | Ubuntu                          |
| Software API    | iManager 2.0                    |

## 后部I/O视图

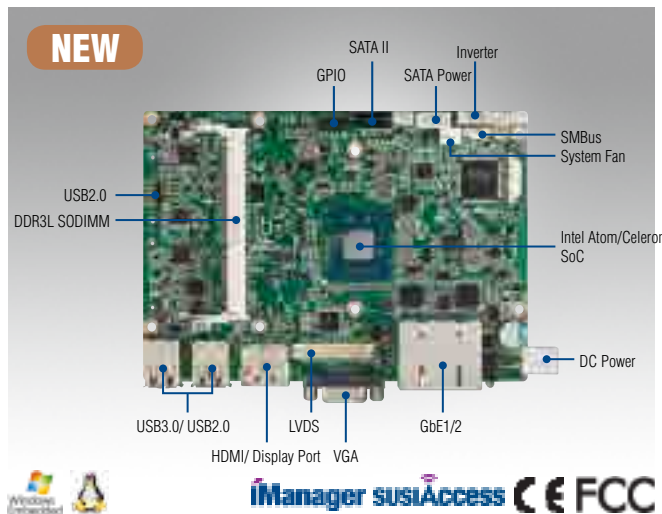


MIO-5250N-S6A1E

MIO-5250D-S8A1E

# MIO-5251

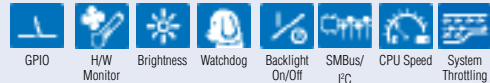
Intel® Atom™ E3825 & Celeron® J1900, 3.5" MI/O-Compact SBC, DDR3L, VGA, HDMI/DP, 48-bit LVDS/eDP, 2GbE, Mini PCIe, mSATA/SD card, iManager, MIOe



## 特点

- 嵌入式Intel Atom SoC双核E3825 & 四核Celeron J1900处理器，最高支持8GB DDR3L-1066/1333MHz内存
- 三独立显示：VGA+LVDS/eDP+HDMI/DP\*，支持Intel Gen 7 DirectX@11.1，OpenGL3.2，OpenCL1.1
- 具有MIOe扩展端口，可实现I/O弹性灵活扩展
- 丰富的I/O接口：2个Intel i210 GbE网口，4个COM端口，1个SATA接口，1个USB 3.0接口，GPIO，SMBus，mSATA（或SD卡槽），Mini-PCIe扩展接口，SIM卡槽
- 支持SUSIAcces，提供嵌入式软件API & 开发工具

Software APIs:



Utilities:



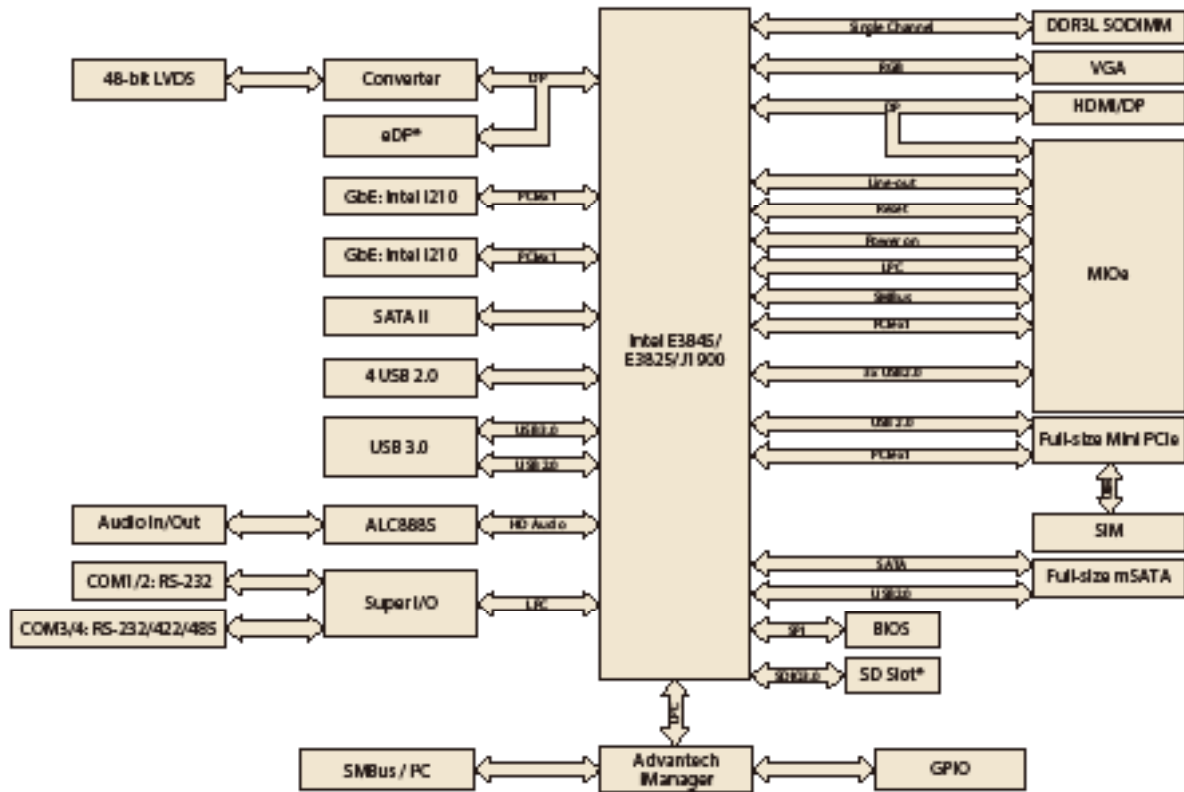
## 规格

|        |                     |   |                      |
|--------|---------------------|---|----------------------|
| 处理器系统  | CPU                 | Intel Celeron J1900   | Intel Atom E3825     |
|        | 基础频率                | 2 GHz (Quad-Core)   | 1.33 GHz (Dual-Core) |
|        | Max Turbo Frequency | 2.42 GHz  | -                    |
|        | L2 Cache            | 2MB   | 1MB                  |
| 内存     | BIOS                | AMI UEFI BIOS at 64 Mb  |                      |
|        | 技术                  | DDR3L 1333 MHz  | DDR3L 1066 MHz       |
|        | 最大容量                | 8 GB  |                      |
| 显示     | 插槽                  | 1 x 204-pin SODIMM  |                      |
|        | 控制器                 | Intel Gen7 graphic engine   |                      |
|        | 图形处理器               | DirectX11, OpenGL3.2, OpenCL1.1   |                      |
|        | VGA                 | Full HW acceleration, decode: H.264, MPEG2/4, VC-1, WMV9. Encode: H.264, MPEG2  |                      |
|        | LVDS                | UXGA 1600 x 1200 at 60Hz  |                      |
|        | eDP*                | 48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz   |                      |
|        | HDMI / DisplayPort* | Supports 3.3/5/12V for VDD power, 5/12V for inverter  |                      |
| 以太网    | 速度                  | up to 2560 x 1600 at 60Hz   |                      |
|        | 控制器                 | HDMI 1.4a for HD video playback, 1080P at 60Hz  |                      |
|        | 连接器                 | Displayport*, up to 2560 x 1600 at 60Hz   |                      |
| 音频     | Codec               | VGA + HDMI/Displayport*, VGA+ LVDS/eDP*, HDMI/Displayport* +LVDS/eDP  |                      |
|        | Amplifier*          | Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in  |                      |
| 看门狗定时器 | Optional via MIOe   | Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds   |                      |
| 存储     | SATA                | 1, up to 3Gb/s (300 MB/s)   |                      |
|        | mSATA               | 1 x Full-size   |                      |
|        | SD slot*            | 1 (Shared with mSATA)   |                      |
| 外部 I/O | 以太网                 | 2 (10/100/1000Mbps)   |                      |
|        | VGA                 | 1   |                      |
|        | HDMI / DisplayPort* | 1   |                      |
|        | USB 2.0             | 3   |                      |
|        | USB 3.0             | 1   |                      |
|        | LED                 | Power, HDD  |                      |
|        | DC Jack*            | 1   |                      |
| 内部 I/O | Serial              | 2 x RS-232 from COM1/2, 2 x RS-232/422/485 from COM3/4 with auto flow control (ESD protection: air gap ±15kV, contact ±8kV) |                      |
|        | USB2.0              | 1   |                      |
|        | I²C                 | 1 (Shared with SMBus pin)   |                      |
|        | SMBus               | 1   |                      |
|        | GPIO                | 8-bit (5V tolerance)  |                      |
| 扩展     | Mini PCIe           | 1 x Full-size with SIM holder   |                      |
|        | MIOe                | SMBus, 3 x USB2.0, LPC, 1 x PCIe x1, line out, DisplayPort*, +5 Vsb/+12 Vsb power, Power On, Rest                           |                      |
| 电源     | 电源类型                | Single 12V DC power input   |                      |
|        | 电源电压                | 12V ± 10%   |                      |
|        | 功耗(典型)              | TBD   |                      |
|        | 功耗(最大, 通过HCT测试)     | TBD   |                      |
|        | 电源管理                | ACPI  |                      |
| 环境     | 电池                  | Lithium 3 V / 210 mA  |                      |
|        | 工作                  | 0 ~ 60° C (32 ~ 140° F) (工作 humidity: 40° C @ 95% RH Non-Condensing)  |                      |
|        | 非工作                 | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |                      |
| 物理特性   | 尺寸 (L x W)          | 146 x 102 mm (5.7" x 4"), same as 3.5"  |                      |
|        | 重量                  | 0.5kg (1.1lb), weight of total package  |                      |
|        | 高度                  | Top Side: 19 mm; Bottom Side: 6.8 mm; PCB: 1.6 mm   |                      |

\* The specification is supported by request



## Block Diagram



\*: Supported by request

## 订货信息

| 料号                | CPU                    | L2 Cache | Memory      | LVDS   | VGA | HDMI/DP | GbE | Audio | RS-232/422/485 | RS-232 | USB 3.0 | USB 2.0 | SATAII | Mini PCIe | mSATA     | MIOe | Power connector | Thermal Solution* | 工作温度        |
|-------------------|------------------------|----------|-------------|--------|-----|---------|-----|-------|----------------|--------|---------|---------|--------|-----------|-----------|------|-----------------|-------------------|-------------|
| MIO-5251J-U0A1E   | Intel J1900 2GHz 10W   | 2MB      | SODIMM      | 48-bit | Yes | 1       | 2   | Yes   | 2              | 2      | 1       | 4       | 1      | Full-size | Full-size | Yes  | 2x2pin          | Passive           | 0 ~ 60° C   |
| MIO-5251E-S3A1E   | Intel E3825 1.33GHz 6W | 1MB      | SODIMM      | 48-bit | Yes | 1       | 2   | Yes   | 2              | 2      | 1       | 4       | 1      | Full-size | Full-size | Yes  | 2x2pin          | Passive           | 0 ~ 60° C   |
| MIO-5251JZ-2GA1E  | Intel J1900 2GHz       | 2MB      | 2GB bundled | 48-bit | Yes | 1       | 2   | Yes   | 2              | 2      | 1       | 4       | 1      | Full-size | Full-size | Yes  | 2x2pin          | Passive (higher)  | -20 ~ 80° C |
| MIO-5251JZ2-2GA1E | Intel J1900 2GHz       | 2MB      | 2GB bundled | 48-bit | Yes | 1       | 2   | Yes   | 2              | 2      | 1       | 4       | 1      | Full-size | Full-size | Yes  | 2x2pin          | Passive (higher)  | -40 ~ 85° C |

Note1: J1900/E3825 with different version BIOS and only for 64bit Win8/Win7, 32bit supported by T-P/N. (Default setting is Legacy boot)

Note2: passive=fanless

## 装箱单

| 料号             | 描述   | 数量 |
|----------------|--|----|
|                | MIO-5251 SBC                                   | 1  |
| 2006525100     | Startup Manual                                 | 1  |
| 1700006291     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90        | 1  |
| 1700018785     | SATA 35cm power cable                          | 1  |
| 1701200220     | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 2  |
| 1700019584     | Audio Cable 2*5P-2.0/JACK*3 20cm               | 1  |
| 9689000002     | mini Jumper pack                               | 1  |
| 1960062791T001 | Heatsink (104 x 83 x 19 mm) for MIO-5251       | 1  |
| 1960066556T001 | Wide temp. heatsink (145.4 x 84.2 x 29 mm)     | 1  |

## 可选配件

| 料号             | 描述                                  |
|----------------|-------------------------------------|
| 1960065073N001 | Heat spreader (16.7mm height)       |
| 1757003934     | Adapter 100-240V 60W 12V 5A W/O PFC |
| 1703100264     | Internal 1 port USB cable 22.5cm    |

## Embedded OS/API

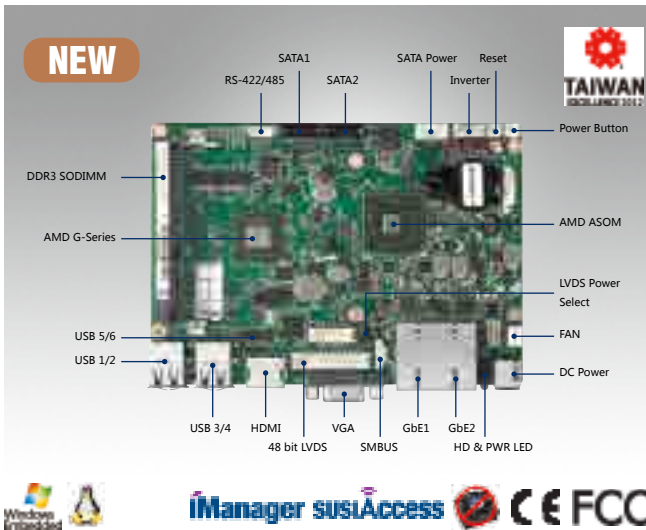
| Embedded OS/API | 料号         | 描述                       |
|-----------------|------------|--------------------------|
| WE8S            | 2070013167 | 64bit (ENG/T-CH/S-CH/JP) |
| WE57E           | 2070013061 | 64bit (ENG/T-CH/S-CH/JP) |
| WEC7            | TBD        |                          |
| Linux           |            | Kernel 3.x               |
| VxWorks         |            | 6.9.3.3                  |
| Android         |            | Kit Kat 4.4              |
| Software API    |            | iManager 2.0             |

## 后部I/O视图



# MIO-5270

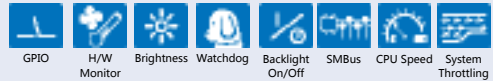
AMD® G- Series 3.5" MI/O-Compact SBC,  
DDR3, HDMI, 48-bit LVDS, VGA, 2 GbE, CFast, iManager, MIOe



## 特点

- 嵌入式AMD G系列单核/双核处理器 + AMD A50M FCH , 1x 高达4 GB的DDR3内存
- DirectX 11, 2D/3D加速, 多显示: 48-bit LVDS、HDMI、VGA
- 采用集成多I/O的灵活设计: MIOe满足垂直应用并保留专业技术优势
- 2 GbE支持, 高清音频, 丰富I/O接口: 4 x COM、2 x SATA、6 x USB和GPIO
- 支持iManager、SUSIAccess和嵌入式软件 API

Software APIs:



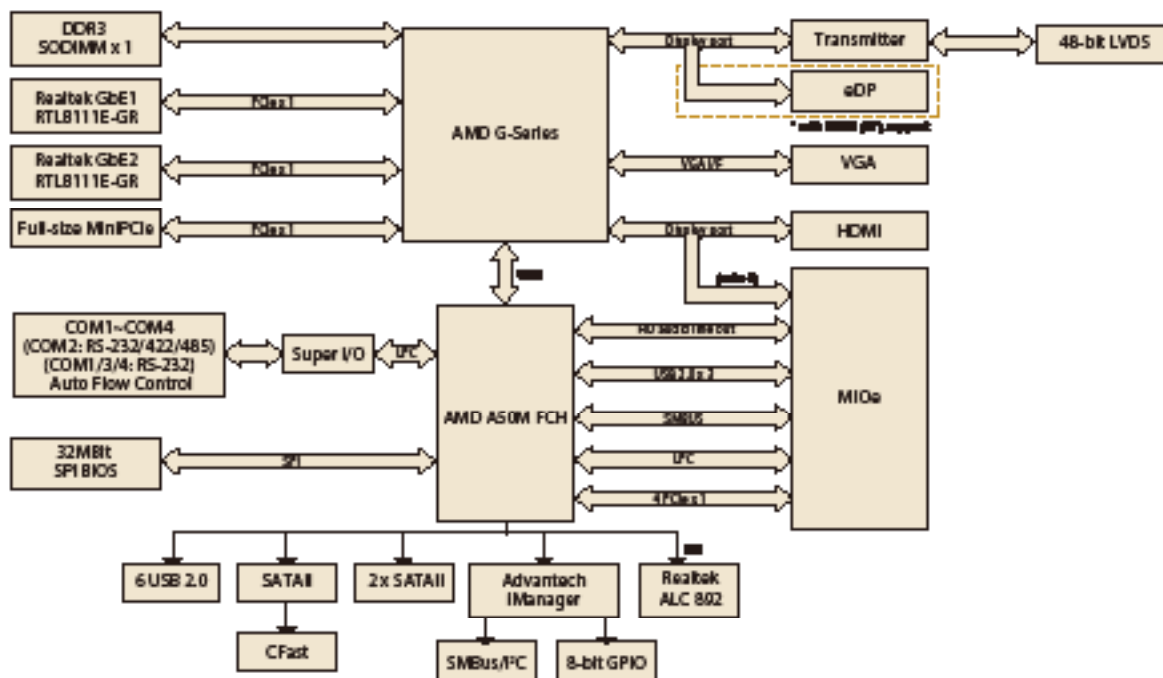
Utilities:



## 规格

|        |   |   |
|--------|---|---|
| 处理器系统  | CPU<br>前端总线<br>二级缓存<br>芯片组<br>BIOS                    | AMD G- Series, T40R 1.0GHz single core, T40E 1.0GHz dual core, T56N 1.65GHz dual core<br>1.0GHz single/dual core, 1.65GHz dual core<br>512 KB on T40R/ T40E, 1 MB on T56N<br>AMD G-Series + A50M FCH<br>AMI EFI 32Mbit  |
| 内存     | 技术<br>最大容量<br>插槽                                      | DDR3 1066 MHz, 1333MHz only for T56N<br>4 GB<br>1 x 204-pin SODIMM  |
| 显示     | Chipset<br>图形引擎<br>LVDS<br>VGA<br>HDMI<br>eDP<br>双显   | AMD G- Series<br>DirectX® 11 graphics with UVD 3.0<br>2D Acceleration, 3D Acceleration, Motion Video Acceleration, Supports DVD, Blu-ray*<br>Hardware decode (UVD 3):H.264, VC-1 & MPEG2<br>LVDS: Supports single channel 24-bit or dual channel 48-bit LVDS<br>T56N up to 2560 x 1600 @ 60 Hz, T40R & T40E up to 1920 x 1200 @ 60 Hz (pixel clock rate = 80 MHz)<br>T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200<br>Supports 1920 x 1080p at 60 Hz, 36 bpp, Supports HDMI v1.3, using TMDS data encoding<br>Option (supported by request)<br>T56N up to 2560 x 1600, T40R & T40E up to 1920 x 1200<br>Yes (VGA+LVDS or VGA + HDMI or HDMI + LVDS) |
| 以太网    | 速度<br>控制器<br>连接器                                      | 10/100/1000Mbps<br>GbE1: Realtek RTL8111E-VB-GR 10/100/1000Mbps, GbE2: Realtek RTL8111E-VB-GR 10/100/1000Mbps<br>2 RJ45 on 外部I/O  |
| Audio  | 芯片组<br>Amplifier                                      | Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in<br>Can be supported via MIOe  |
| 看门狗定时器 |   | 255 levels timer 间隔, programmable by software   |
| 存储     | CFast<br>mSATA<br>SATA                                | 1<br>(Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe)<br>2 x SATA II (Max. Data Transfer Rate 300 MB/s)  |
| 外部 I/O | 以太网<br>VGA<br>HDMI<br>USB<br>LED<br>DC Jack           | 2 (10/100/1000Mbps)<br>1<br>1<br>4 x USB 2.0<br>Power, HDD<br>1 (Supported only on MIO-5270S-S0A1E & MIO-5270D-S0A1E)   |
| 内部 I/O | USB<br>Serial<br>I <sup>2</sup> C<br>SMBus<br>GPIO    | 2 x USB 2.0<br>3 RS-232 from COM1/3/4, 1 RS-232/422/485 support auto flow control from COM2 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)<br>1 (Shares with SMBus pin)<br>1 (Shares with SMBus pin)<br>8-bit general purpose input/output  |
| 扩展     | Full-size MiniPCIe<br>MIOe                            | 1<br>SMBus, 3 x USB2.0, LPC, 4 x PCIe, line out, 5 Vsb/12 Vsb power, ACPI S3/S5, Displayport (optional)   |
| 电源     | 电源类型<br>电源电压<br>功耗 (Typical)<br>功耗 (Max, test in HCT) | Single 12V DC power input<br>Supports single 12V input, ± 10%<br>MIO-5270S-S0A1E: 0.59 A @ 12 V (7.08 W)<br>MIO-5270D-S0A1E: 0.53 A @ 12 V (6.36 W)<br>MIO-5270D-S6A1E: 0.65 A @ 12 V (7.8 W)<br>MIO-5270S-S0A1E: 0.8 A @ 12 V (9.6 W)<br>MIO-5270D-S0A1E: 0.82 A @ 12 V (9.84 W)<br>MIO-5270D-S6A1E: 1.35 A @ 12 V (16.2 W)  |
| 环境     | 电源管理<br>电池<br>工作<br>非工作                               | ACPI<br>Lithium 3 V / 210 mAh<br>0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)<br>-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |
| 物理特性   | 尺寸 (L x W)<br>重量<br>总重                                | 146 x 102 mm (5.7" x 4"), same as 3.5"<br>0.78 kg (1.72 lb), weight of total package<br>34.5 mm   |

### 结构图



### 订货信息

| 料号                 | CPU               | L2 Cache | Memory     | LVDS   | VGA & HDMI | GbE | Audio | RS-232/422/485 | RS-232 | USB 2.0 | SATAII | CFast | Mini PCIe | MIOe | Power 连接器 | Thermal Solution | 工作 Temp.    |
|--------------------|-------------------|----------|------------|--------|------------|-----|-------|----------------|--------|---------|--------|-------|-----------|------|-----------|------------------|-------------|
| MIO-5270S-S0A1E    | AMD T40E 1.0G SC  | 512 KB   | SO-DIMM    | 48-bit | Yes        | 2   | Yes   | 1              | 3      | 6       | 2      | 1     | 1         | Yes  | DC Jack   | Passive          | 0 ~ 60° C   |
| MIO-5270D-S0A1E    | AMD T40E 1.0G DC  | 512 KB   | SO-DIMM    | 48-bit | Yes        | 2   | Yes   | 1              | 3      | 6       | 2      | 1     | 1         | Yes  | DC Jack   | Passive          | 0 ~ 60° C   |
| MIO-5270D-S6A1E    | AMD T56N 1.65G DC | 1 MB     | SO-DIMM    | 48-bit | Yes        | 2   | Yes   | 1              | 3      | 6       | 2      | 1     | 1         | Yes  | 2x2 type  | Active           | 0 ~ 60° C   |
| MIO-5270DZ-2GS0A1E | AMD T40E 1.0G DC  | 512 KB   | 2GB bundle | 48-bit | Yes        | 2   | Yes   | 1              | 3      | 6       | 2      | 1     | 1         | Yes  | DC Jack   | Passive          | -20 ~ 80° C |
| MIO-5270DZ2GS0A1E  | AMD T40E 1.0G DC  | 512 KB   | 2GB bundle | 48-bit | Yes        | 2   | Yes   | 1              | 3      | 6       | 2      | 1     | 1         | Yes  | DC Jack   | Passive          | -40 ~ 85° C |

Note: Passive = fanless; Active = with fan

Note: Wide temperature range version has been bundled with industrial-grade memory module.

### 装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
|                | MIO-5270 SBC                                      |    |
|                | Startup Manual                                    |    |
|                | Utility CD  |    |
| 1700006291     | SATA1 cable 7P/ 7P 30cm C=R 180/90                | 1  |
| 1700018785     | SATA Power Cable 35cm                             | 1  |
| 1700019435     | COM1 RS-485 D-SUB 9P (M)/1*5P 1.25 25cm cable     | 1  |
| 1701200220     | COM RS232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM     | 2  |
| 1700019584     | Audio Cable 2*5P-2.0/ JACK*3 20cm                 | 1  |
| 9689000002     | mini Jumper pack                                  | 1  |
| 1960053507N001 | Heatsink (137 x 84 x 25 mm) for T40R/ T40E series |    |
| 1960053508N001 | Cooler (137 x 84 x 25 mm) for T56N series         |    |

### 可选配件

| 料号             | 描述   |
|----------------|--|
| 1960054266T001 | Heat spreader for MIO-5270 (137 x 84.2 x 16.7mm)   |
| 1700006291     | SATA2 cable 7P/ 7P 30cm C=R 180/90                 |
| 1703100260     | USB5/6 cable                                       |
| 1910002088     | The Post Standoff, F= M3*6L, M=M3*5L, B=5, H=16 Ni |
| 1757003082     | Adaptor 100-240V 60W 12V 5A W/O PFC                |

### Embedded OS/API

| Embedded OS/API | 描述                              |
|-----------------|---------------------------------|
| 2070010844      | XPE WES2009 MIO-5270 V4.0 24MUI |
| 2070010845      | WES7E SP1 MIO-5270 V5.1 ENG     |
| Linux           | Ubuntu 12.04                    |
| Software API    | iManager 2.0                    |

### 后部I/O视图

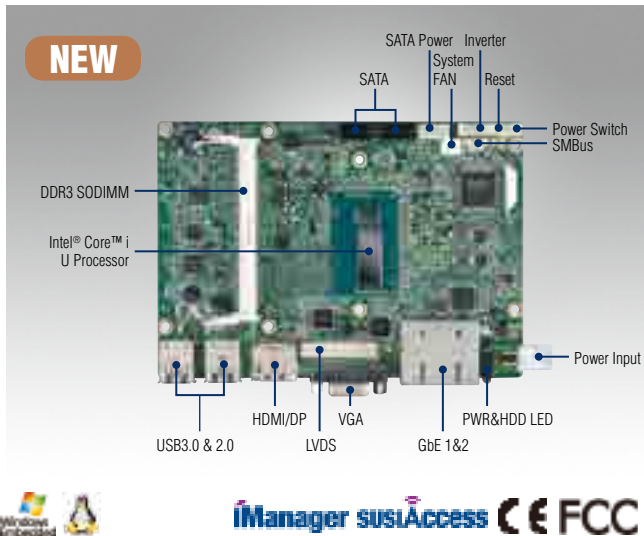


MIO-5270S-S0A1E  
MIO-5270D-S0A1E

MIO-5270D-S6A1E

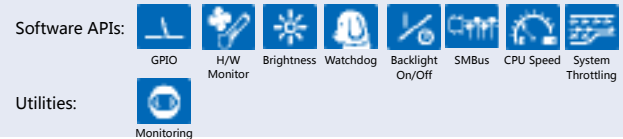
# MIO-5271

4th Gen Intel® Core™ U-series (i5/Celeron),  
3.5" MI/O-Compact SBC, DDR3L, VGA, HDMI/DP\*, 48-bit LVDS, 2GbE, 2 x Mini PCIe, mSATA, Fanless, MIOe



## 特点

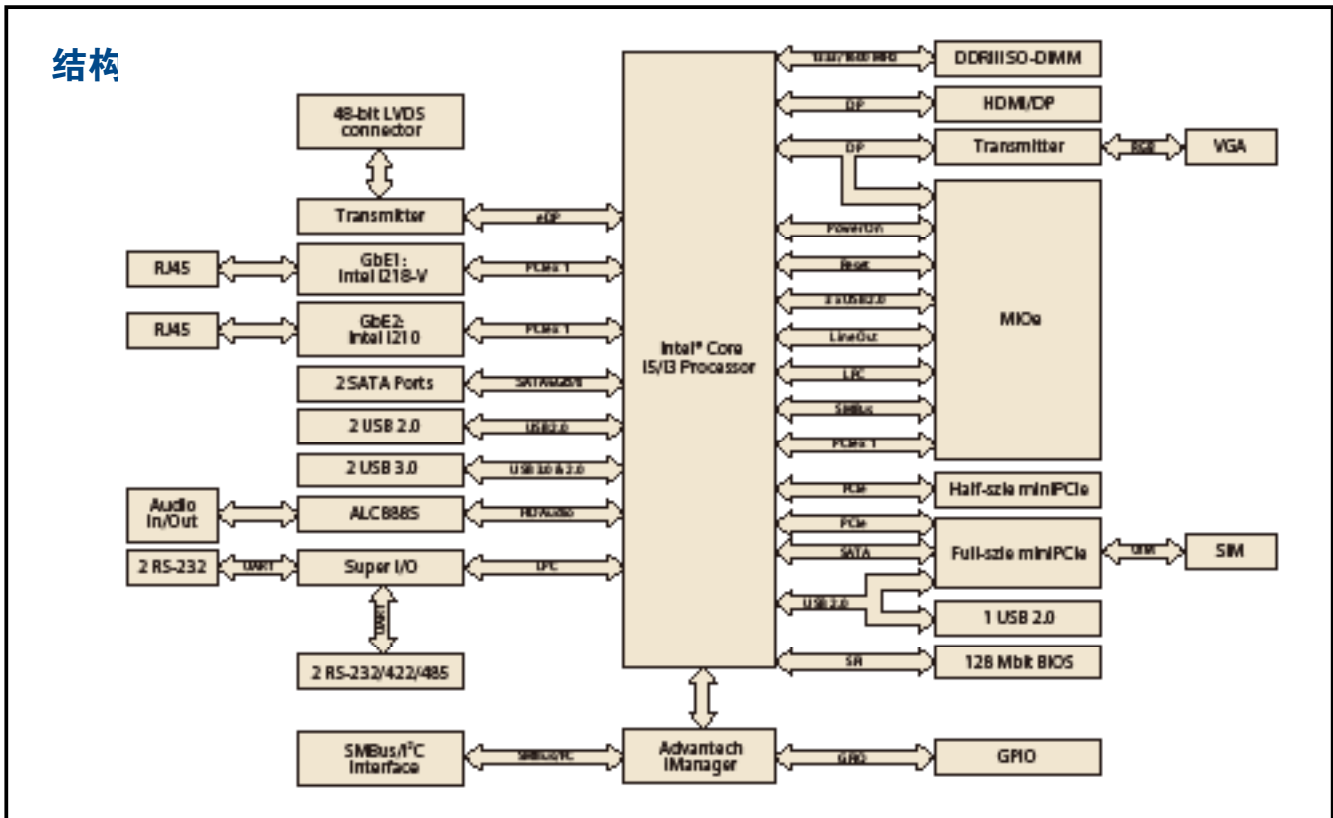
- 嵌入式Intel Core™第四代Haswell ULTSoCi5-4300U双核 1.9GHz & Celeron 2980U双核 1.6GHz处理器，最高支持8GB DDR3L-1600/1333MHz内存
- 三独立显示：VGA + LVDS + HDMI/Displayport\*，支持Intel Gen 7 DirectX®11.1，OpenGL4.0，OpenCL1.2
- 具有MIOe扩展端口，可实现I/O弹性灵活扩展
- 丰富的I/O接口：2个Intel GbE网口，4个COM端口，2个SATA接口，2个USB 3.0接口，GPIO，SMBus，半高Mini-PCIe扩展接口，全高Mini-PCIe扩展接口（默认为mSATA），SIM卡槽
- 支持Intel AMT9.0，iManager，SUSIAccess，提供嵌入式软件API & 开发工具



## 规格

|        |                     |  |                       |
|--------|---------------------|--|-----------------------|
| 处理器系统  | CPU                 | Intel® Core™ Core i5-4300U   | Intel® Celeron® 2980U |
|        | 基础频率                | 1.9 GHz (Dual-Core)  | 1.6GHz (Dual-Core)    |
|        | Max Turbo Frequency | 2.9 GHz  | N/A                   |
|        | L3 Cache            | 3MB  | 2MB                   |
|        | 系统芯片                | Integrated Intel® 8 Series Chipset   |                       |
| 内存     | BIOS                | AMI UEFI 128 Mbit  |                       |
|        | 技术                  | DDR3L 1333/1600 MHz  |                       |
| 显示     | 最大容量                | 8 GB   |                       |
|        | 插槽                  | 1 x 204-pin SODIMM   |                       |
|        | 控制器                 | Intel® HD Graphics 4400 / Intel® HD Graphics (Celeron)   |                       |
|        | 图形处理器               | DirectX11.1, OpenGL 4.0, and OpenCL 1.2<br>Full AVC/VC1/MPEG2 HW Decode  |                       |
|        | VGA                 | Up to 1920 x 1200 with 60 Hz, 154 MHz pixel clock rate   |                       |
|        | LVDS                | LVDS with 3.3V, 5V and 12V on LCD VDD power, 5V and 12V support on LVDS inverter<br>Dual channel 24-bit LVDS, max resolution up to 1920 x 1200 with 60Hz |                       |
| 以太网    | HDMI / DisplayPort* | Supports HDMI 1.4 for HD Video playback<br>Max resolution up to 3200 x 2000 at 60 Hz on DisplayPort, 4096 x 2304 at 24 Hz on HDMI                        |                       |
|        | 多显                  | VGA+HDMI/DP*, VGA+LVDS, HDMI/DP*+LVDS, VGA + HDMI/DP* + LVDS   |                       |
|        | 速度                  | 10/100/1000Mbps  |                       |
| 音频     | 控制器                 | GbE1: Intel i218, GbE2: Intel i210   |                       |
|        | 连接器                 | 2 RJ45 on Rear I/O   |                       |
| 看门狗定时器 | Codec               | Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in   |                       |
| 存储     | Amplifier           | Optional via MIOe  |                       |
|        | SATA                | Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds  |                       |
| 外部 I/O | mSATA               | 2, up to 6.0 Gb/s (600 MB/s)   |                       |
|        | 以太网                 | Supports either mSATA or full size miniPCIe, selected by HW switch, default support miniPCIe   |                       |
|        | VGA                 | 2  |                       |
|        | HDMI / DisplayPort* | 1  |                       |
|        | USB 2.0             | 1  |                       |
|        | USB 3.0             | 2  |                       |
|        | LED                 | Power, HDD   |                       |
| 内部 I/O | DC Jack*            | 1  |                       |
|        | Serial              | 2 x RS-232 from COM1/2, 2 x RS-232/422/485 from COM3/4 with auto flow control (ESD protection: Air gap ±15kV, Contact ±8kV)                              |                       |
|        | USB*                | 1 (Shares with the USB port for Mini PCIe)   |                       |
|        | I²C                 | 1 (Shares with SMBus pin, supported by request)  |                       |
|        | SMBus               | 1  |                       |
| 扩展     | GPIO                | 8-bit general purpose input/output   |                       |
|        | Mini PCIe           | 1 x Full-size with SIM card holder<br>1 x Half-size  |                       |
| 电源     | MIOe                | Displayport*, SMBus, 3 x USB2.0, LPC, 1 x PCIe x1, line out, +5 Vsb/+12 Vsb power, Power On, Reset   |                       |
|        | 电源类型                | Single 12V DC power input  |                       |
|        | 电源电压                | Supports single 12V input, ± 10%   |                       |
|        | 功耗(典型)              | MIO-5271U-S6A1E: 0.38 A @ 12 V (4.56 W)<br>MIO-5271U-S9A1E: 0.39 A @ 12 V (4.68 W)   |                       |
|        | 功耗(最大, 通过HCT测试)     | MIO-5271U-S6A1E: 1.71 A @ 12 V (20.52 W)<br>MIO-5271U-S9A1E: 2.46 A @ 12 V (29.52 W)   |                       |
|        | 电源管理                | ACPI   |                       |
| 环境     | 电池                  | Lithium 3 V / 210 mAH  |                       |
|        | 工作                  | 0 ~ 60° C (32 ~ 140° F) (工作 humidity: 40° C @ 95% RH Non-Condensing)   |                       |
| 物理特性   | 非工作                 | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing   |                       |
|        | 尺寸 (L x W)          | 146 x 102 mm (5.7" x 4"), same as 3.5"   |                       |
|        | 重量                  | 0.84 kg (1.72lb), weight of total package  |                       |
|        | 高度                  | Top Side: 24 mm; Bottom Side: 6.8 mm; PCB: 1.6mm   |                       |

结构



订货信息

| 料号                 | CPU                           | L2 Cache | Memory      | LVDS   | VGA | HDMI/DP <sup>1</sup> | GbE | HD Audio | RS-232/422/485 | RS-232 | USB 3.0 | USB 2.0 | SATAII | Half-size Mini PCle | Full-size Mini PCle <sup>2</sup> | MIOe | Power connector | Thermal Solution <sup>2</sup> | 工作温度        |
|--------------------|-------------------------------|----------|-------------|--------|-----|----------------------|-----|----------|----------------|--------|---------|---------|--------|---------------------|----------------------------------|------|-----------------|-------------------------------|-------------|
| MIO-5271U-S9A1E    | Intel i5-4300U 1.9GHz 15W     | 3MB      | SODIMM      | 48-bit | Yes | HDMI                 | 2   | Yes      | 2              | 2      | 2       | 2       | 1      | 1                   | 1                                | 1    | 2x2pin          | Passive                       | 0 ~ 60° C   |
| MIO-5271U-S6A1E    | Intel Celeron2980U 1.6GHz 15W | 2MB      | SODIMM      | 48-bit | Yes | HDMI                 | 2   | Yes      | 2              | 2      | 2       | 2       | 1      | 1                   | 1                                | 1    | 2x2pin          | Passive                       | 0 ~ 60° C   |
| MIO-5271Z-4GS9A1E  | Intel i5-4300U 1.9GHz 15W     | 3MB      | 4GB bundled | 48-bit | Yes | HDMI                 | 2   | Yes      | 2              | 2      | 2       | 2       | 1      | 1                   | 1                                | 1    | 2x2pin          | Passive                       | -20 ~ 80° C |
| MIO-5271Z2-4GS9A1E | Intel i5-4300U 1.9GHz 15W     | 3MB      | 4GB bundled | 48-bit | Yes | HDMI                 | 2   | Yes      | 2              | 2      | 2       | 2       | 1      | 1                   | 1                                | 1    | 2x2pin          | Passive                       | -40 ~ 85° C |

<sup>1</sup> Support by request  
<sup>2</sup> Default support mSATA

装箱单

| 料号             | 说明  | 数量 |
|----------------|---|----|
|                | MIO-5271 SBC                                      | 1  |
| 2006527100     | Startup Manual                                    | 1  |
| 1700006291     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90           | 1  |
| 1700018785     | SATA 35cm power cable                             | 1  |
| 1701200220     | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM    | 2  |
| 1700019584     | Audio Cable 2*5P-2.0/JACK*3 20cm                  | 1  |
| 9689000002     | mini Jumper pack                                  | 1  |
| 1960062041T001 | Heatsink (104 x 83 x 24 mm) for MIO-5271          | 1  |
| 1960066765T001 | Heatsink (145 x 84 x 34 mm) for MIO-5271Z&Z2 only | 1  |

可选配件

| 料号             | 说明                            |
|----------------|-------------------------------|
| 1960063980N001 | Heat spreader for MIO-5271    |
| 1700023098-01  | Internal 1 x USB-A cable 15CM |

Embedded OS/API

| Embedded OS/API             | 料号         | 说明                                     |
|-----------------------------|------------|--|
| Windows Embedded Standard 7 | 2070012422 | WES7E 32/64bit MIO-5271 ENG/GER/JPN/CH |
| VxWorks                     |            |  |
| Linux                       |            | Ubuntu 13.04                           |
| Software API                |            | iManager 2.0                           |

后部I/O视图

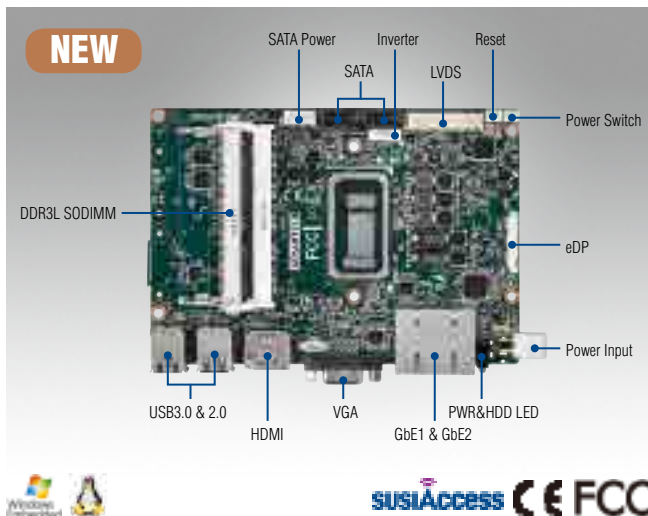


MIO-5271U-S9A1E  
 MIO-5271U-S6A1E  
 MIO-5271Z-4GS9A1E  
 MIO-5271Z2-4GS9A1E



# MIO-5272

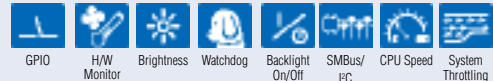
6th Gen Intel® Core™ U-series (i5/i3/Celeron®), 3.5" MI/O-Compact SBC, DDR3L, VGA, HDMI, 48-bit LVDS, 2 GbE, 2 Mini PCIe, mSATA, Fanless, MIOe



## 特点

- 6th Gen Intel® Core™ U-series, 2 x DDR3L-1600/1333 SO-DIMM support up to 16 GB
- DirectX11.2, OpenGL4.0, OpenCL2.x, 3 independent display: VGA + LVDS + HDMI
- Flexible design using integrated multiple I/O: MIOe to approach vertical applications & keep domain knowhow.
- 2 GbE support, HD Audio, Rich I/O interface with 2 COM, 2 SATA, SMBus/PC, GPIO, 2 Full-size Mini PCIe (one w/ mSATA), 4 USB 2.0, 2 USB 3.0 and TPM2.0
- Supports Intel AMT11.0, SUSIAccess and Embedded Software APIs

Software APIs:



Utilities:



## 规格

|        |                     |  |   |                          |
|--------|---------------------|--|---|--------------------------|
| 处理器系统  | CPU                 | Intel i5 6300U   | Intel Core i3-6100U   | Intel Core Celeron 3955U |
|        | Base Frequency      | 2.4 GHz (Dual-Core)  | 2.3 GHz (Dual-Core)   | 2.0 GHz (Dual-Core)      |
|        | Max Turbo Frequency | 3.0 GHz  | -   | -                        |
|        | L3 Cache            | 3MB  | 3MB   | 2MB                      |
|        | BIOS                | AMI UEFI 128 Mbit  |   |                          |
| 内存     | 技术                  | DDR3L 1600 MHz   |   |                          |
|        | 最大容量                | 16 GB  |   |                          |
|        | 插槽                  | 2 x 204-pin SODIMM   |   |                          |
| 显示     | 控制器                 | Intel HD Graphics 520 / Intel HD Graphics 510 (Celeron)  |   |                          |
|        | 图形处理器               | DirectX11.3, OpenGL 4.3, and OpenCL 2.0<br>Full AVC/VC1/MPEG2 HW Decode  |   |                          |
|        | VGA                 | Up to 1920 x 1200 at 60 Hz   |   |                          |
|        | LVDS                | LVDS with 3.3V, 5V and 12V on LCD VDD power, 5V and 12V support on LVDS inverter<br>Dual channel 24-bit LVDS, max resolution up to 1920 x 1200 at 60Hz |   |                          |
|        | HDMI                | Supports HDMI 1.4 for HD Video playback<br>Max resolution up to 4096 x 2160 at 24 Hz   |   |                          |
|        | eDP*                | Max resolution up to 4096 x 2304 at 60 Hz  |   |                          |
| 以太网    | 速度                  | 10/100/1000Mbps  |   |                          |
|        | 控制器                 | GbE1: Intel i219, GbE2: Intel i210   |   |                          |
|        | 连接器                 | 2 RJ45 on Rear I/O   |   |                          |
|        | Audio               | Codec  | High Definition Audio (HD), Line-in, Line out, Mic-in                         |                          |
| 看门狗定时器 | Amplifier           | Optional via MIOe  |   |                          |
|        |                     | Output System reset, Programmable counter from 1 - 255 minutes/ seconds  |   |                          |
| 存储     | SATA                | 2, up to 6.0 Gb/s (600 MB/s)   |   |                          |
|        | mSATA               | 1 x Full-size (support either mSATA or miniPCIe, select by BIOS setting)   |   |                          |
| 外部 I/O | Ethernet            | 2  |   |                          |
|        | VGA                 | 1  |   |                          |
|        | HDMI                | 1  |   |                          |
|        | USB 2.0             | 2  |   |                          |
|        | USB 3.0             | 2  |   |                          |
|        | LED                 | Power, HDD   |   |                          |
|        | DC Jack*            | 1  |   |                          |
| 内部 I/O | Serial              | 2 x RS-232/422/485 with auto flow control (ESD protection: Air gap ±15kV, Contact ±8kV)  |   |                          |
|        | USB                 | 2  |   |                          |
|        | PC                  | 1 (Shares with SMBus pin)  |   |                          |
|        | SMBus               | 1  |   |                          |
|        | GPIO                | 8-bit general purpose input/output   |   |                          |
| 安全     | TPM2.0*             | Support by request   |   |                          |
| 扩展     | Mini PCIe           | 2 x Full-size (One with SIM card holder. Another one with mSATA support, default support mSATA)  |   |                          |
|        | MIOe                | Displayport*, SMBus, USB3.0, LPC, 2 x PCIe x1, line out, +5 Vsb/+12 Vsb power, Power On, Reset   |   |                          |
|        | 电源                  | 电源类型   | Single 12V DC power input   |                          |
| 电源     | 电源电压                | Supports single 12V input, ± 10%   |   |                          |
|        | 功耗 (典型)             | TBD  |   |                          |
|        | 功耗 (最大)             | TBD  |   |                          |
|        | 电源管理                | ACPI   |   |                          |
|        | 电池                  | Lithium 3 V / 210 mAH  |   |                          |
|        | 环境                  | 工作   | 0 - 60° C (32 - 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing) |                          |
| 非工作    |                     | -40° C - 85° C and 60° C @ 95% RH Non-Condensing   |   |                          |
| 物理特性   | 尺寸 (L x W)          | 146 x 102 mm (5.7" x 4"), same as 3.5"   |   |                          |
|        | 重量                  | TBD, weight of total package   |   |                          |
|        | 高度                  | Top Side: 16.3 mm; Bottom Side: 6.8 mm; PCB: 2.4 mm  |   |                          |

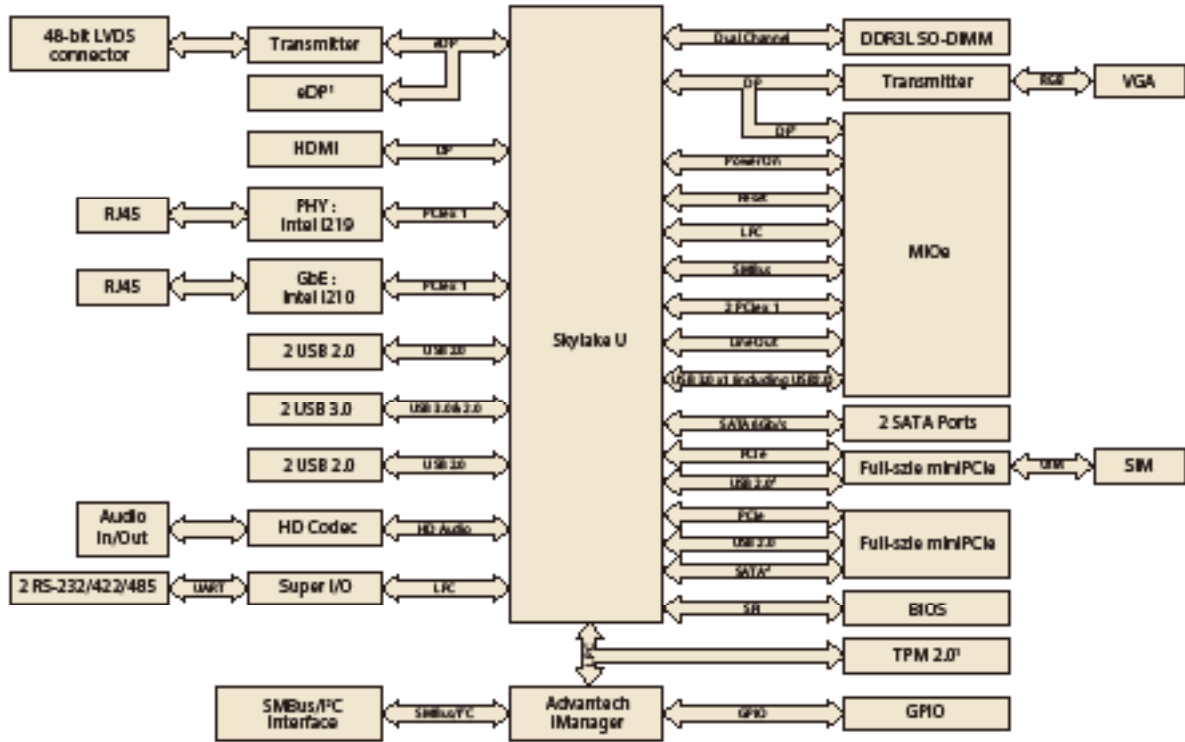
\*It will not be supported in default, please contact to Advantech if this function is needed.

ADVANTECH

All product specifications are subject to change without notice

Last updated : 16-Nov-2015

### 结构图



<sup>1</sup> Supported by request  
<sup>2</sup> MIO-5272U-U0A1E not support

### 订货信息

| 料号              | CPU <sup>1</sup>               | L3 Cache | Memory  | LVDS   | VGA | HDMI | eDP <sup>2</sup> | GbE | HD Audio | RS-232/422/485 | USB 3.0 | USB 2.0 | SATAIII | Full-size Mini PCle | MIOe | Power connector | Thermal Solution <sup>2</sup> | Operation Temp. |
|-----------------|--------------------------------|----------|---------|--------|-----|------|------------------|-----|----------|----------------|---------|---------|---------|---------------------|------|-----------------|-------------------------------|-----------------|
| MIO-5272U-U4A1E | Intel i5 6300U 2.4GHz 15W      | 3MB      | SO-DIMM | 48-bit | Yes | Yes  | Yes              | 2   | 1        | 2              | 2       | 4       | 2       | 2 <sup>3</sup>      | 1    | 2x2 pin         | Passive                       | 0 - 60° C       |
| MIO-5272U-U3A1E | Intel i3 6100U 2.3GHz 15W      | 3MB      | SO-DIMM | 48-bit | Yes | Yes  | Yes              | 2   | 1        | 2              | 2       | 4       | 2       | 2 <sup>3</sup>      | 1    | 2x2 pin         | Passive                       | 0 - 60° C       |
| MIO-5272U-U0A1E | Intel Celeron 3955U 2.0GHz 15W | 2MB      | SO-DIMM | 48-bit | Yes | Yes  | Yes              | 2   | 1        | 2              | 2       | 4       | 2       | 2                   | 1    | 2x2 pin         | Passive                       | 0 - 60° C       |

<sup>1</sup> Intel Core i7-6600U is supported by request  
<sup>2</sup> Support by request  
<sup>3</sup> One Mini PCIe default support mSATA

### 装箱单

| 料号         | 描述   | 数量 |
|------------|--|----|
|            | MIO-5272 SBC                                   | 1  |
| 2006527200 | Startup Manual                                 | 1  |
| 1700006291 | M Cable SATA 7P/SATA 7P 30cm C=R 180/90        | 1  |
| 1700018785 | SATA 35cm power cable                          | 1  |
| 1701200220 | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 1  |
| 1700019584 | Audio Cable 2*5P-2.0/JACK*3 20cm               | 1  |
| 9689000002 | mini Jumper pack                               | 1  |
| TBD        | Heatsink (TBD mm) for MIO-5272                 | 1  |

### 后部I/O视图

### 可选配件

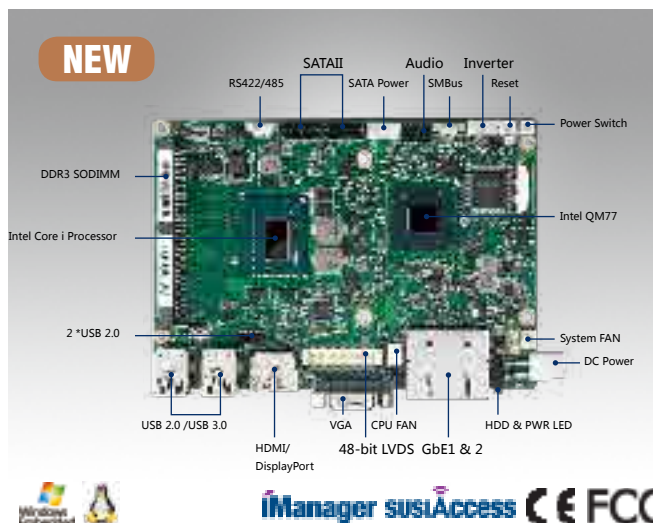
| 料号         | 描述                              |
|------------|---------------------------------|
| TBD        | Heat spreader for MIO-5272      |
| 1700002172 | Internal 2 ports USB cable 17CM |

### Embedded OS/API

| Embedded OS/API             | 料号 | 描述       |
|-----------------------------|----|----------|
| Windows Embedded 8 Standard |    |          |
| Windows Embedded 7 Standard |    |          |
| VxWorks                     |    |          |
| Linux                       |    |          |
| Software API                |    | SUSI 4.0 |

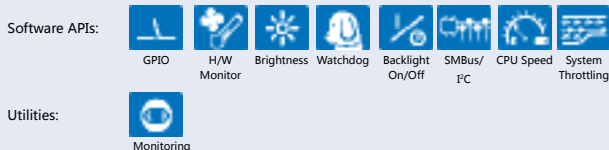
# MIO-5290

Intel® Core™ i7 / i3, 3.5" MI/O-Compact SBC, DDR3/DDR3L, VGA, DP/HDMI, 48-bit LVDS, 2GbE, 2 x Mini PCIe, mSATA, iManager, MIOe



## 特点

- Intel Core i3和i7处理器 + Intel QM77 PCH, 1x 高达8 GB DDR3/DDR3L SODIMM支持
- DirectX 9, 双独立显示: 18/24-bit LVDS + VGA
- 采用集成多I/O的灵活设计: MIOe满足垂直应用并保留专业技术优势
- 2 GbE支持, 高清音频, 丰富I/O接口: 2 x COM, 2 x SATA, SMBus, 8-bit GPIO, 半长Mini PCIe, 全长Mini PCIe和2 x USB 3.0
- 支持iManager、SUSIAccess和嵌入式软件 API

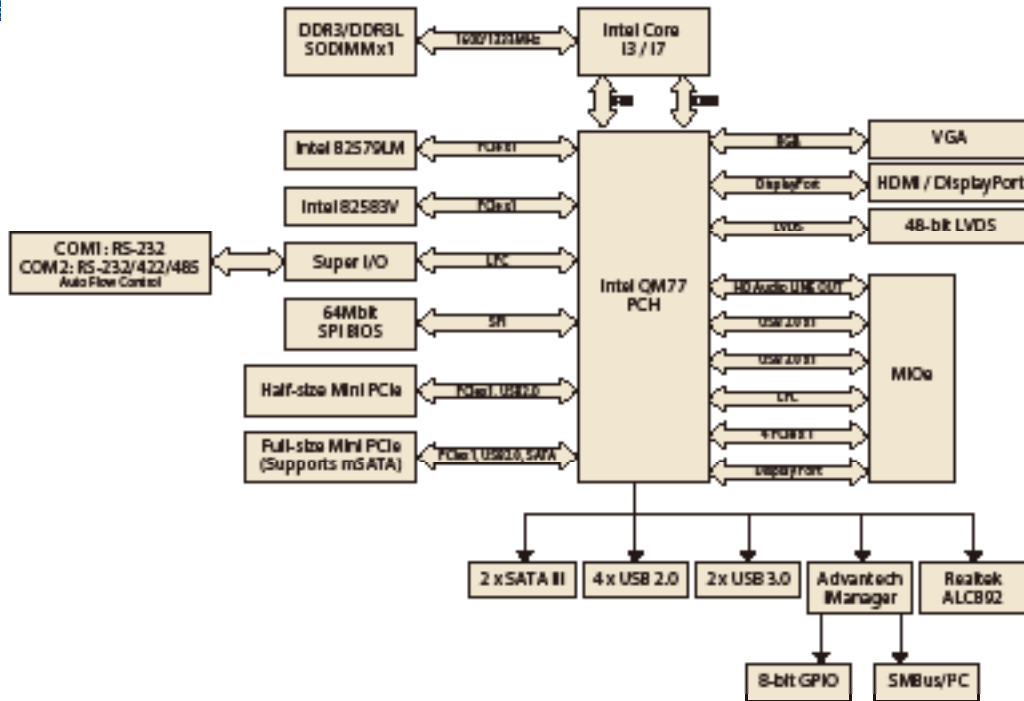


## 规格

|        |   |   |   |   |  |
|--------|---|---|---|---|--|
| 处理器系统  | CPU<br>Frequency<br>L3 Cache<br>System Chipset<br>BIOS                        | Celeron 1047UE<br>1.4GHz (Dual-Core)<br>2MB<br>Intel QM77<br>AMI EFI 64Mbit   | ULV Core i3 3217UE<br>1.6GHz (Dual-Core)<br>3MB | ULV Core i7 3517UE<br>1.7GHz (Dual-Core)<br>4MB | LV Core i7 3555LE<br>2.5GHz (Dual-Core)<br>4MB |
| 内存     | 技术<br>最大容量<br>插槽  | DDR3 1600MHz, DDR3L 1333 MHz<br>8 GB<br>1 x 204-pin SODIMM  |   |   |  |
| 显示     | 控制器<br>图形引擎<br>VGA<br>LVDS<br>HDMI / DisplayPort*<br>3 Independent Display    | Intel HD Graphics 4000 / Intel HD Graphics (Celeron)<br>DirectX11, OpenGL 3.1, and OpenCL 1.1<br>Hardware decode acceleration: AVC/H.264, MPEG-2, VC-1<br>Integrated 340.4MHz RAMDAC, Max resolution up to 2048 x 1536 at 75Hz<br>LVDS with 3.3V, 5V and 12V on LCD VDD power, 5V and 12V support on LVDS inverter<br>Dual channel 24-bit LVDS, max resolution up to 2560 x 1600 at 60Hz<br>Supports HDMI 1.4 for HD Video playback<br>Max resolution up to 2560 x 1600 at 60Hz on DisplayPort, Max resolution up to 1920 x 1200 at 60Hz on HDMI<br>VGA + Displayport (coastline) + Displayport (MIOe) or LVDS + Displayport (coastline) + DisplayPort (MIOe)   |   |   |  |
| 以太网    | 速度<br>控制器<br>连接器  | 10/100/1000Mbps<br>GbE1: Intel 82579LM, GbE2: Intel 82583V<br>2 RJ45 on Rear I/O  |   |   |  |
| Audio  | Chipset<br>Amplifier  | Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in<br>Optional via MIOe  |   |   |  |
| 看门狗定时器 |   | Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds   |   |   |  |
| 存储     | SATA<br>mSATA   | 2, up to 6.0 Gb/s (600 MB/s)<br>Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe   |   |   |  |
| 外部 I/O | Ethernet<br>VGA<br>HDMI / DisplayPort<br>USB 2.0<br>USB 3.0<br>LED<br>DC Jack | 2 (10/100/1000Mbps)<br>1<br>1<br>2 x USB 2.0<br>2 x USB 3.0<br>Power, HDD<br>Only on MIO-5290U-S6A1E/MIO-5290U-S7A1E  |   |   |  |
| 内部 I/O | USB<br>Serial<br>PC<br>SMBus<br>GPIO  | 2 x USB 2.0<br>RS-232 from COM1, RS-232/422/485 from COM2 with auto flow control (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)<br>1 (Shares with SMBus pin)<br>1<br>8-bit general purpose input/output   |   |   |  |
| 扩展     | Mini PCIe<br>MIOe   | 1 x Full-size<br>1 x Half-size<br>Displayport, SMBus, 1 x USB2.0, 1 x USB3.0, LPC, 4 x PCIe x1, line out, 5 Vsb/12 Vsb power, Power On Reset  |   |   |  |
| 电源     | 电源类型<br>电源电压<br>功耗(Typical)<br>功耗(Max, test in HCT)<br>电源管理<br>电池             | Single 12V DC power input<br>Supports single 12V input, ± 10%<br>MIO-5290U-S6A1E: w/DDR3: 1.615 A @ 12 V (19.38 W), w/DDR3L: 1.507 A @ 12 V (18.08 W)<br>MIO-5290U-S7A1E: w/DDR3: 2.023 A @ 12 V (24.28 W), w/DDR3L: 1.965 A @ 12 V (23.5 W)<br>MIO-5290L-U5A1E: w/DDR3: 2.356 A @ 12 V (28.27 W), w/DDR3L: 2.309 A @ 12 V (27.7 W)<br>MIO-5290U-S4A1E: w/DDR3: 1.18 A @ 12 V (14.16 W), w/DDR3L: 1.1 A @ 12 V (13.2 W)<br>MIO-5290U-S6A1E: w/DDR3: 2.024 A @ 12 V (24.29 W), w/DDR3L: 1.84 A @ 12 V (22.08 W)<br>MIO-5290U-S7A1E: w/DDR3: 2.412 A @ 12 V (28.94 W), w/DDR3L: 2.3 A @ 12 V (27.6 W)<br>MIO-5290L-U5A1E: w/DDR3: 2.896 A @ 12 V (34.75 W), w/DDR3L: 2.708 A @ 12 V (32.5 W)<br>MIO-5290U-S4A1E: w/DDR3: 1.68 A @ 12 V (20.16 W), w/DDR3L: 1.49 A @ 12 V (17.88 W)<br>ACPI<br>Lithium 3 V / 210 mAh |   |   |  |
| 环境     | 工作<br>非工作   | 0 ~ 60° C (32 ~ 140° F) (工作 humidity: 40° C @ 95% RH Non-Condensing)<br>-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |   |   |  |
| 物理特性   | 尺寸 (L x W)<br>重量<br>高度  | 146 x 102 mm (5.7" x 4"), same as 3.5"<br>0.84 kg (1.72lb), weight of total package<br>Top Side: 37 mm (MIO-5290U series), 47.7 mm (MIO-5290L series); Bottom Side: 9 mm; PCB: 1.6mm  |   |   |  |

\* In order to have optimize compatibility on HDMI, DisplayPort is not under best configuration. If any compatibility issue occur on DP, please help to contact with technical service.

结构图



订货信息

| 料号              | CPU                                     | L3 Cache | LVDS   | VGA | HDMI/DP | GbE | HD Audio | RS-232/422/485 | RS-232 | USB 3.0 | USB 2.0 | SATA | Half-size Mini PCIe | Full-size Mini PCIe <sup>1</sup> | MIOe | Power connector | Thermal Solution <sup>2</sup> | Operation Temp. |
|-----------------|---|----------|--------|-----|---------|-----|----------|----------------|--------|---------|---------|------|---------------------|----------------------------------|------|-----------------|-------------------------------|-----------------|
| MIO-5290U-S6A1E | Intel Core i3 ULV 1.6GHz 3217UE DC, 17W | 3MB      | 48-bit | Yes | Yes     | 2   | Yes      | 1              | 1      | 2       | 4       | 2    | 1                   | 1                                | Yes  | DC Jack         | Active                        | 0 ~ 60° C       |
| MIO-5290U-S7A1E | Intel Core i7 ULV 1.7GHz 3517UE DC, 17W | 4MB      | 48-bit | Yes | Yes     | 2   | Yes      | 1              | 1      | 2       | 4       | 2    | 1                   | 1                                | Yes  | DC Jack         | Active                        | 0 ~ 60° C       |
| MIO-5290L-U5A1E | Intel Core i7 LV 2.5GHz 3555LE DC, 25W  | 4MB      | 48-bit | Yes | Yes     | 2   | Yes      | 1              | 1      | 2       | 4       | 2    | 1                   | 1                                | Yes  | 2x2 pin         | Active                        | 0 ~ 60° C       |
| MIO-5290U-S4A1E | Intel Celeron 1.40 GHz 1047UE DC, 17W   | 2MB      | 48-bit | Yes | Yes     | 2   | Yes      | 1              | 1      | 2       | 4       | 2    | 1                   | 1                                | Yes  | 2x2 pin         | Active                        | 0 ~ 60° C       |

<sup>1</sup> Full-size Mini PCIe supports mSATA

<sup>2</sup> Active = with fan

装箱单

| 料号             | 描述  | 数量 |
|----------------|---|----|
| 2006529000     | MIO-5290 SBC                                      | 1  |
| 1700006291     | Startup Manual                                    | 1  |
| 1700018785     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90           | 1  |
| 1700019435     | SATA 35cm power cable                             | 1  |
| 1701200220     | COM RS-485 D-SUB 9P (M)/1*5P 1.25 25cm cable      | 1  |
| 1700019584     | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM    | 1  |
| 9689000002     | Audio Cable 2*5P-2.0/JACK*3 20cm                  | 1  |
| 1960057431N001 | mini Jumper pack                                  | 1  |
| 1960057432N001 | Cooler for MIO-5290L series only (Height: 47.7mm) | 1  |
| 1960057433N001 | Cooler for MIO-5290U series only (Height: 37mm)   | 1  |

可选配件

| 料号             | 描述                                  |
|----------------|-------------------------------------|
| 1960058000N001 | Heat spreader for MIO-5290          |
| 1700006291     | SATA cable 7P/ 7P 30cm C=R 180/90   |
| 1703100260     | USB5/6 cable                        |
| 1757003934     | Adaptor 100-240V 60W 12V 5A W/O PFC |

Embedded OS/API

| Embedded OS/API             | 料号                        | 描述   |
|-----------------------------|---------------------------|--|
| Windows Embedded Standard   | 2070011449                | WES2009 MIO-5290 ENG                       |
| Windows Embedded Standard 7 | 2070011453/<br>2070011452 | WES7E 32/64bit MIO-5290 ENG/GER/<br>JPN/CH |
| Linux                       |                           | Ubuntu 12.04                               |
| Software API                |                           | iManager 2.0                               |

后部/O视图



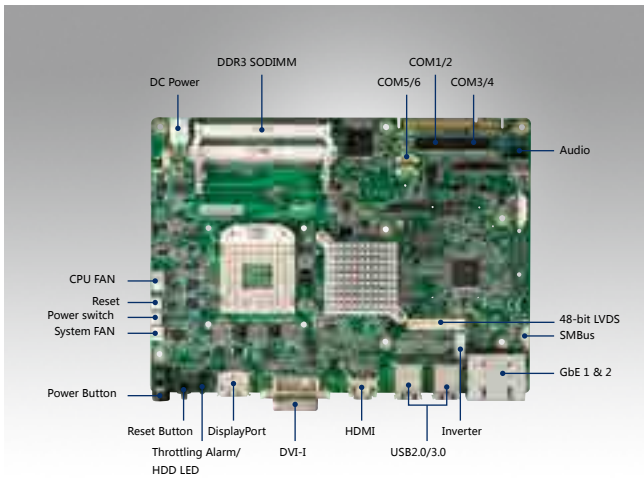
MIO-5290U-S6A1E  
MIO-5290U-S7A1E



MIO-5290L-U5A1E

# MIO-9290

Intel® 3<sup>rd</sup> Core™ i7/i5/i3 rPGA988, 5.25" MI/O SBC, DDR3/DDR3L, DP, HDMI, DVI-I, 48-bit LVDS, 2GbE, 4 USB3.0, 2 Mini PCIe, mSATA, iManager, MIOe

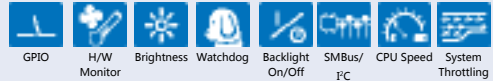


iManager susiAccess CE FCC

## 特点

- 支持Intel第三代Core i7/i5/i3移动处理器 (rPGA), 带Intel QM77 PCH、2 x 高达16 GB DDR3/DDR3L SODIMM支持
- DirectX11, OpenGL3.1, OpenCL1.1, 3种独立显示: MIOe满足垂直应用并保留专业技术优势
- 2 GbE支持, 高清音频, 丰富I/O接口: 4 x COM、2 x SATA、SMBUS/I2C、16-bit GPIO、2 x 全长Mini PCIe/mSATA、2 x USB 2.0、4 x USB 3.0
- 支持iManager、SUSIAccess、嵌入式软件 API & Intel iAMT 8.0

Software APIs:



Utilities:

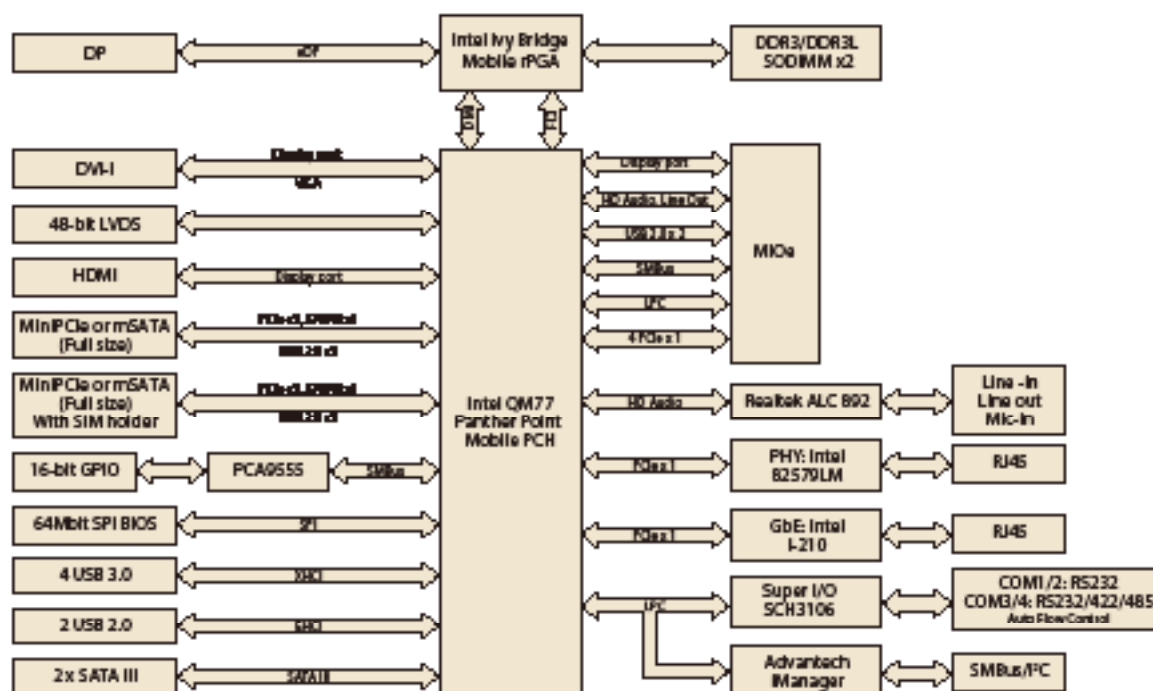


## 规格

|                   |                       |  |   |                      |                     |
|-------------------|-----------------------|--|---|----------------------|---------------------|
| 处理器系统             | CPU                   | Intel Core i7-3610QE   | Intel Core i5 3610ME                                      | Intel Core i3 3120ME | Intel Celeron 1020E |
|                   | Frequency             | 2.3 GHz (Quad Core)  | 2.7 GHz (Dual Core)                                       | 2.4 GHz (Dual Core)  | 2.2 GHz (Dual Core) |
|                   | L3 Cache              | 6 MB   | 3 MB  | 3 MB                 | 3 MB                |
|                   | System Chipset        | Intel QM77   |   |                      |                     |
|                   | BIOS                  | AMI EFI 64Mbit   |   |                      |                     |
| 内存                | 技术                    | Dual Channel DDR3 1600 MHz, DDR3L 1333 MHz   |   |                      |                     |
|                   | 最大容量                  | 8GB x 2  |   |                      |                     |
|                   | 插槽                    | 2 x 204-pin SODIMM   |   |                      |                     |
| 显示                | 控制器                   | Intel Ivy Bridge Processor + Intel QM77 Integrated GFX Gen 7   |   |                      |                     |
|                   | 图形引擎                  | DirectX11, OpenGL 3.1, and OpenCL 1.1  |   |                      |                     |
|                   | DisplayPort           | Hardware decode acceleration: AVC/H.264, MPEG-2, VC-1  |   |                      |                     |
|                   | LVDS                  | Max resolution up to 1920 x 1200 @ 60Hz<br>LVDS with 3.3V, 5V on LCD VDD power, 5V and 12V support on LVDS inverter<br>Dual channel 24-bit LVDS, max resolution up to 1920 x 1080 @ 60Hz |   |                      |                     |
|                   | HDMI                  | Supports HDMI 1.4 for HD Video playback  |   |                      |                     |
|                   | DVI-I                 | Max resolution up to 2560 x 1600 @ 60Hz  |   |                      |                     |
| 以太网               | 3 Independent Display | DP + HDMI + DVI-I  |   |                      |                     |
|                   | 速度                    | 10/100/1000Mbps  |   |                      |                     |
|                   | 控制器                   | GbE1 - Intel 82579LM, GbE2 - Intel I-210IT   |   |                      |                     |
| Audio             | 连接器                   | 2 RJ45 on 外部I/O  |   |                      |                     |
| 看门狗定时器            | Chipset               | Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in  |   |                      |                     |
| Storage           | 看门狗定时器                | 255 levels timer 间隔, programmable by software  |   |                      |                     |
|                   | SATAIII               | 2 x Serial-ATA port, up to 6.0 Gb/s (600 MB/s)   |   |                      |                     |
| 外部I/O             | mSATA                 | 2 (Supports mSATA or USB 接口 module or full size miniPCIe)  |   |                      |                     |
|                   | 以太网                   | 2 (10/100/1000Mbps)  |   |                      |                     |
|                   | 显示接口                  | 1  |   |                      |                     |
|                   | DVI-I                 | 1  |   |                      |                     |
|                   | HDMI                  | 1  |   |                      |                     |
|                   | USB 3.0               | 4 (USB 3.0 compliant)  |   |                      |                     |
|                   | LED                   | Red: Throttling alarm, Yellow: HDD   |   |                      |                     |
| 内部I/O             | Power Button          | 1  |   |                      |                     |
|                   | Reset Button          | 1  |   |                      |                     |
|                   | USB                   | 2 (USB 2.0 compliant)  |   |                      |                     |
|                   | LVDS/Inverter         | 1  |   |                      |                     |
|                   | Serial                | 2 RS-232 from COM1/2, 2 RS-232/422/485 from COM3/4 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)  |   |                      |                     |
|                   | I2C                   | RS-232 with Tx/Rx only from COM5/6 is optional by request  |   |                      |                     |
|                   | SMBus                 | 1 (Shares with SMBus pin)  |   |                      |                     |
| 扩展                | GPIO                  | 16-bit general purpose input/output  |   |                      |                     |
|                   | Mini PCIe             | 2 x Full-size Mini PCIe (Supports mSATA)   |   |                      |                     |
|                   | MIOe                  | SMBus, 2 USB2.0, LPC, 4 PCIe x 1, line out, 5 Vsb/12 Vsb power, Displayport  |   |                      |                     |
| 电源                | 电源类型                  | Single 12V DC power input  |   |                      |                     |
|                   | 电源电压                  | Supports single 12V input, ± 10%   |   |                      |                     |
|                   | 功耗 (Typical)          | i7 3610QE w/DDR3:  | 0.646 A @ 12 V (7.75 W), w/DDR3L: 0.662 A @ 12 V (7.94 W) |                      |                     |
|                   |                       | i5 3610ME w/DDR3:  | 0.614 A @ 12 V (7.37 W), w/DDR3L: 0.606 A @ 12 V (7.27 W) |                      |                     |
|                   |                       | i3 3120ME w/DDR3:  | 0.622 A @ 12 V (7.46 W), w/DDR3L: 0.612 A @ 12 V (7.34 W) |                      |                     |
|                   | 功耗 (Max, test in HCT) | Celeron 1020E w/DDR3:  | 0.632 A @ 12 V (7.58 W), w/DDR3L: 0.623 A @ 12 V (7.48 W) |                      |                     |
| i7 3610QE w/DDR3: |                       | 3.759 A @ 12 V (45.11 W), w/DDR3L: 3.675 A @ 12 V (44.1 W)   |   |                      |                     |
| i5 3610ME w/DDR3: |                       | 2.375 A @ 12 V (28.5 W), w/DDR3L: 2.336 A @ 12 V (28.03 W)   |   |                      |                     |
| 环境                | i3 3120ME w/DDR3:     | 1.675 A @ 12 V (20.1 W), w/DDR3L: 1.656 A @ 12 V (19.87 W)   |   |                      |                     |
|                   | Celeron 1020E w/DDR3: | 1.595 A @ 12 V (19.14 W), w/DDR3L: 1.548 A @ 12 V (18.58 W)  |   |                      |                     |
| 物理特性              | 电源管理                  | ACPI   |   |                      |                     |
|                   | 电池                    | Lithium 3 V / 210 mAh  |   |                      |                     |
|                   | 工作                    | 0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)  |   |                      |                     |
| 物理特性              | 非工作                   | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing   |   |                      |                     |
|                   | 尺寸 (L x W)            | 203 x 146 mm (8" x 5.75")  |   |                      |                     |
|                   | 重量                    | TBD, weight of total package   |   |                      |                     |



## 结构图



## 订货信息

| 料号              | CPU             | Memory  | DP  | LVDS   | DVI-I | HDMI | GbE | HD Audio | RS-422/485 | RS-232 | USB 3.0 | USB 2.0 | SATAIII | Full-size Mini PCIe* | MIOe | Power 连接器 | Thermal Solution* | Operation Temp. |
|-----------------|-----------------|---------|-----|--------|-------|------|-----|----------|------------|--------|---------|---------|---------|----------------------|------|-----------|-------------------|-----------------|
| MIO-9290F-00A1E | Socket rPGA988* | SO-DIMM | Yes | 48-bit | Yes   | Yes  | 2   | Yes      | 2          | 4      | 4       | 2       | 2       | 1                    | Yes  | 2x2 pin   | Active            | 0 ~ 60° C       |

\* Full-size Mini PCIe supports mSATA

\* Active = with fan

\* Reserve Sandy Bridge CPU design

## 装箱单

| 料号             | 描述   | 数量 |
|----------------|--|----|
|                | MIO-9290 SBC                                   | 1  |
|                | Startup Manual                                 | 1  |
| 1700006291     | M Cable SATA 7P/SATA 7P 30cm C=R 180/90        | 1  |
| 1700018785     | SATA 35cm power cable                          | 1  |
| 1701200220     | COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM | 2  |
| 1700019584     | Audio Cable 2*5P-2.0/JACK*3 20cm               | 1  |
| 9666929000E    | mini Jumper pack                               | 1  |
| 1960054541N011 | MIO-9290 cooler                                | 1  |

## 可选配件

| 料号               | 描述   |
|------------------|--|
| 1700006291       | SATA cable 7P/ 7P 30cm C=R 180/90                  |
| 1700018785       | SATA 35cm power cable                              |
| 1703100260       | Internal USB cable                                 |
| 1910002088       | The Post Standoff, F= M3*6L, M=M3*5L, B=5, H=16 Ni |
| 96MPI3M-2.4-3M9T | CPU i3-3120ME 2.4G 3M Dual Core                    |
| 96MPI5-2.7-3M9T  | CPU i5-3610ME 2.7G 3M Dual Core                    |
| 96MPI7M-2.3-6M9T | CPU i7-3610QE 2.3G 6M Quad Core                    |

## 后部I/O视图



## Embedded OS/API

| Embedded OS/API | 描述                 |
|-----------------|--------------------|
| Win XPE         | WES2009            |
| WES7            | WES7E MIO-9290 ENG |
| WE8S            | WE8S MIO-9290 ENG  |
| Linux           | CentOS             |
| Software API    | iManager 2.0       |

# MI/O 扩展模块



**MIOe-110**  
2 x RS-232,  
2 x RS-232/422/485  
(with power and isolation),  
2 x USB 2.0

## 规格

| General        |   |
|----------------|---|
| Bus 接口         | MIOe LPC/USB  |
| Super I/O      | SCH3106   |
| 外部I/O          |   |
| COM port       | COM1/2: Both at coastline and internal box wafer, simultaneously<br>COM1: RS-232/422/485 (With isolation. RS-485 with auto flow control).<br>COM2: RS-232/422/485 (Supports wake on ring, Supply 5V/12V power selected by jumper. RS-485 with auto flow control). |
| 内部I/O          |   |
| COM port       | COM3/4: RS-232 (Support wake on ring)   |
| USB 2.0        | 2   |
| Communications |   |
| Data Bits      | 5, 6, 7, 8  |
| Data Signals   | RS-422: TxD+, TxD-, RxD+, RxD-<br>RS-485: DATA+, DATA-<br>RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND  |
| IRQ            | Depends on MI/O CPU Board   |
| Parity         | even, odd, sticky or no   |
| 速度             | 50 to 460k, 921k* and 1.5M* Baud  |
| Stop Bits      | 1, 1.5, 2   |
| Protection     |   |
| ESD            | Air gap ±15kV and contact ±8kV for all COM ports  |
| Isolation      | 2.5kV for COM1  |
| Compatibility  |   |
| 外部I/O          | MI/O-Ultra  |
| 机械             | MI/O-Ultra  |
| Function       | MI/O-Compact*, MI/O-Ultra*  |
| 环境             |   |
| 尺寸(WxD)        | 100 x 72 mm (3.9" x 2.8")   |
| 重量             | 0.04 kg (0.09lb), only for board  |
| 工作温度           | 0 ~ 60° C (32 ~ 140° F)   |
| 工作湿度           | 40° C @ 95% RH Non-Condensing   |
| 存储环境           | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |
| Power          |   |
| 电源电压           | Supported by MI/O Extension SBC   |

\* Except for MIO-2261 and MIO-5270, other MI/O CPU boards need customized BIOS.

## 订货信息

| P/N             | 描述   |
|-----------------|--|
| MIOe-110F-00A1E | 2 x RS-232/422/485, 2 x RS-232, w/ isolation, 2 x USB  |
| MIOe-110L-00A1E | 1 x RS-232/422/485, 2 x RS-232, w/o isolation, 2 x USB |

## 附件

| P/N        | 描述                | 数量 |
|------------|-------------------|----|
| 1700018999 | COM3/4 cable 22cm | 1  |

## 可选配件

| P/N        | 描述                                  |
|------------|-------------------------------------|
| 1700019414 | COM1/2 internal cable 30cm          |
| 1700019071 | 2 ports USB cable w/o bracket, 12cm |



**MIOe-120**  
2 x GbE, HDMI, Mini PCIe,  
SIM holder, speaker out,  
LPC, 2 x USB 2.0

## 规格

| General       |   |
|---------------|---|
| Bus 接口        | MIOe PCI Express/ USB/ LPC/ Audio line-out  |
| Ethernet 控制器  | GbE Intel® 82583V   |
| PCIe Switch   | PLX PEX8605   |
| USB Hub 控制器   | Terminus FE1.1 USB 2.0 4-port hub   |
| 外部I/O         |   |
| GbE           | 1 (10/100/1000 Mbps), both at coastline and internal box wafer, simultaneously                        |
| USB 2.0       | 2 (Both at coastline and internal box wafer, simultaneously)  |
| HDMI          | 1 (by request, only for MIO-2261)   |
| 内部I/O         |   |
| GbE           | 1 (10/100/1000 Mbps)  |
| Speaker out   | 1 with amplifier (Max 2.2W/ch stereo into a 3Ω load)  |
| LPC           | 1 (support extra four COM ports by PCA-COM232-00A1E or PCA-COM485-00A1E, TPM module by PCA-TPM-00A1E) |
| 扩展            |   |
| Mini PCIe     | 1 (full size, with SIM holder, including of USB 接口)   |
| Compatibility |   |
| 外部I/O         | MI/O-Ultra  |
| 机械            | MI/O-Compact, MI/O-Ultra  |
| Function      | MI/O-Compact*, MI/O-Ultra*  |
| 机械和环境         |   |
| 尺寸(L x W)     | 100 x 72 mm (3.9" x 2.8")   |
| Weight        | 0.04 kg (0.09lb), only for board  |
| 工作温度          | Standard operating: 0 ~ 60° C (32 ~ 140° F)   |
| 工作湿度          | 40° C @ 95% RH Non-Condensing   |
| 存储温度          | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |
| Power         |   |
| 电源电压          | Supported by MI/O Extension SBC   |

- \* 1. HDMI: Only for MIO-2261, supported by request
- 2. LPC: Supported by OEM BIOS for PCA-COM232-00A1E, PCA-COM485-00A1E, and PCA-TPM-00A1E
- 3. MIO-5250 doesn't support MIOe-120L

## 订货信息

| P/N             | 描述   |
|-----------------|--|
| MIOe-120F-00A1E | 2 x GbE w/ PCIe switch, 2 x USB, Mini PCIe, SIM holder, speaker-out with amplifier, LPC  |
| MIOe-120L-00A1E | 1 x GbE w/o PCIe switch, 2 x USB, Mini PCIe, SIM holder, speaker-out with amplifier, LPC |

## 可选配件

| P/N              | 描述   |
|------------------|--|
| 1700019001       | 1 x LAN cable, 15cm                        |
| 1700019071       | 2 ports USB cable w/o bracket, 12cm        |
| PCA-COM232-00A1E | 4 x RS-232 extension module, 31.5x48mm     |
| PCA-COM485-00A1E | 4 x RS-422/485 extension module, 31.5x48mm |
| PCA-TPM-00A1E    | TPM module, 31.5x48mm                      |

# MI/O 扩展模块



## MIOe-210

4 x RS232/422/485,  
2 x RS422/485, 8-bit GPIO

### 规格

| General        |  |
|----------------|--|
| Bus 接口         | MIOe LPC   |
| Ports          | 4 x RS232/422/485, 2 x RS422/485   |
| GPIO           | 8-bit with 3.3V level  |
| Communications |  |
| Data Bits      | 5, 6, 7, 8   |
| Data Signals   | RS-422: TxD+, TxD-, RxD+, RxD-<br>RS-485: DATA+, DATA-<br>RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND |
| IRQ            | Depends on MI/O CPU Board  |
| Parity         | even, odd, sticky or no  |
| Speed          | 50 to 460k, 921k* and 1.5M* Baud   |
| Stop Bits      | 1, 1.5, 2  |
| Protection     |  |
| EFT Protection | Air gap ±15kV, contact ±8kV  |
| Compatibility  |  |
| 外部I/O          | MI/O-Compact   |
| 机械             | MI/O-Compact   |
| Function       | MI/O-Compact*, MI/O-Ultra*   |
| 环境             |  |
| 尺寸(WxD)        | 146 x 102 mm (5.7" x 4")   |
| Weight         | 0.186 kg (0.41 lb)   |
| 工作湿度           | 0 ~ 90 % relative humidity, non-condensing   |
| 工作温度           | 0 ~ 60° C (32 ~ 140° F)  |
| 存储温度           | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing   |
| 电源             |  |
| 电源电压           | Supported by MI/O Extension SBC  |

\* Requires customized BIOS for MI/O CPU board support.

### 订货信息

| P/N            | 描述   |
|----------------|--|
| MIOe-210-D6A1E | 4 x RS232/422/485, 2 x RS422/485, 8-bit GPIO |

### 附件

| 料号         | 描述                              | 数量 |
|------------|---------------------------------|----|
| 1703040157 | RS-422/485 W/D-SUB COM 4P 15 cm | 2  |



## MIOe-220

3 x Intel® Gigabit Ethernet

### 规格

| General       |  |
|---------------|--|
| Bus 接口        | MIOe PCI Express                                 |
| Chipset       | Intel® 82583V Gigabit Ethernet 控制器               |
| PCIe Switch   | PLX PEX8605                                      |
| Port          | 3 x RJ45   |
| Speed         | 10/100/1000 Mbps                                 |
| Compatibility |  |
| 外部I/O         | MI/O-Compact                                     |
| 机械            | MI/O-Compact                                     |
| Function      | MI/O-Compact, MI/O-Ultra                         |
| 机械和环境         |  |
| 尺寸(L x W)     | 102 x 83 mm (4" x 3.2")                          |
| Weight        | 0.182 kg (0.401 lb)                              |
| 工作温度          | Standard operating: 0 ~ 60° C (32 ~ 140° F)      |
| 工作湿度          | 0% ~ 90% relative humidity, non-condensing       |
| 存储温度          | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing |
| 电源            |  |
| 电源电压          | Supported by MI/O Extension SBC                  |

### 订货信息

| P/N            | 描述  |
|----------------|---|
| MIOe-220-L3A1E | 3 x Intel® Gigabit Ethernet without PCIe Switch                         |
| MIOe-220-B3A1E | 3 x Intel® Gigabit Ethernet with PCIe Switch (for MIO-5250 or MIO-2261) |

# MI/O 扩展模块



**MIOe-230**  
48-bit LVDS or DisplayPort<sup>1</sup>,  
2 x USB 2.0

## 规格

| General            |   |
|--------------------|---|
| Bus 接口             | MIOe Displayport & USB 2.0                          |
| 控制器                | Chrontel CH7511                                     |
| Brightness Control | Supported   |
| USB                | 2 x USB 2.0   |
| Compatibility      |   |
| 外部I/O              | MI/O-Ultra  |
| 机械                 | MI/O-Compact, MI/O-Ultra                            |
| Function           | MI/O-Compact <sup>2</sup> , MI/O-Ultra <sup>2</sup> |
| 机械 环境              |   |
| 尺寸 (L x W)         | 100 x 72 mm (3.9" x 2.8")                           |
| Weight             | 0.084 kg (0.185 lb)                                 |
| 工作温度               | 0 ~ 60° C (32 ~ 140° F)                             |
| 工作湿度               | 0% ~ 90% relative humidity, non-condensing          |
| 电源                 |   |
| 电源电压               | Supported by MI/O Extension SBC                     |

<sup>1</sup> Supports by request

<sup>2</sup> Requires customized BIOS for or HW adjustment MI/O CPU board support.

## 订货信息

| P/N            | 描述                                      |
|----------------|---|
| MIOe-230-L0A1E | 48-bit LVDS or DisplayPort, 2 x USB 2.0 |

## MIOe-PWR1

12-24V DC to DC Power Module  
MI/O-Chassis compliant



## 规格

| General                      |  |
|------------------------------|--|
| Input Voltage                | 12 to 24 V <sub>DC</sub> ±5%               |
| Output Voltage               | 12V ±10%                                   |
| Output Current               | Max. 5A                                    |
| Protection                   | OVP, OCP, Anti-reverse                     |
| Connector type               | Input: Phoenix 2pin<br>Output: ATX 2x2pin  |
| Mechanical and Environmental |  |
| Dimensions (L x W)           | 90 x 53 mm (3.5" x 2.1")                   |
| Operating Temperature        | 0 ~ 60° C (32 ~ 140° F)                    |
| Weight                       | 0.084 kg (0.185 lb)                        |
| Operating Humidity           | 0% ~ 90% relative humidity, non-condensing |

## 订货信息

| P/N              | Description                            |
|------------------|--|
| MIOe-PWR1-00A1E  | 12-24V DC to DC power module           |
| MIOe-PWR1Z-00A1E | 12-24V DC power module<br>-20 ~ 80 ° C |

## 可选配件

| Part No.      | Description                         |
|---------------|-------------------------------------|
| 1700021072-01 | Power cable 2*2P-4.2/2*2P-4.2, 10cm |

# MI/O 扩展模块

## MIOe-3680

2-Port CAN-Bus MIOe Module with Isolation Protection



### 规格

| General                      |  |
|------------------------------|--|
| Bus Interface                | MIOe PCI Express   |
| Certification                | CE,FCC   |
| Connectors                   | 2 x DB9 male connectors / 2 x 10pin box wafer for option |
| Ports                        | 2  |
| Power Consumption            | 5 V @ 630 mA (Max)                                       |
| Compatibility                |  |
| Rear I/O                     | MI/O-Compact   |
| Mechanical                   | MI/O-Compact   |
| Function                     | MI/O-Compact, MI/O-Ultra                                 |
| Communications               |  |
| CAN Controller               | NXP SJA-1000   |
| CAN Transceiver              | NXP TJA1051T   |
| Signal Support               | CAN_H, CAN_L   |
| Protocol                     | CAN 2.0 A/B  |
| Data Transfer Rate(bps)      | Programmable up to 1 Mbps                                |
| CAN Frequency                | 16MHz  |
| Protection                   |  |
| Isolation Protection         | 2,500 V <sub>DC</sub>                                    |
| Mechanical and Environmental |  |
| Operating Temperature        | -40 ~ 85° C (-40 ~ 185° F) (refer to IEC 68-2-1, 2)      |
| Storage Temperature          | -40 ~ 85° C (-40 ~ 185° F)                               |
| Operating Humidity           | 5 ~ 95% Relative Humidity, non-condensing                |
| Dimensions (L x W)           | 146 x 102 mm (5.7" x 4")                                 |

### 订货信息

| P/N          | Description  |
|--------------|--|
| MIOe-3680-AE | 2-Port CAN-Bus MIOe Module with Isolation Protection |

## MIOe-3674/3672

4 or 2-port 10/100/1000 BaseT(X) 802.3af (PoE) Compliant Ethernet ports



### 规格

| General                      |   |
|------------------------------|---|
| Bus Interface                | MIOe PCI Express  |
| Certification                | CE,FCC  |
| Connectors                   | RJ45 (10pin box wafer for option)   |
| Power consumption            | MIOe-3674: Typical: 15.4 W, Max: 70.8 W<br>MIOe-3672: Typical: 15.4 W, Max: 35.4 W  |
| Compatibility                |   |
| Rear I/O                     | MI/O-Compact  |
| Mechanical                   | MI/O-Compact  |
| Function                     | MI/O-Compact, MI/O-Ultra  |
| Communications               |   |
| Compatibility                | IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE802.3x, IEEE802.3af<br>Powered Device (PD) auto detection and classification<br>Supports IEEE 802.3u Auto-Negotiation |
| Speed                        | 10/100/1000 Mbps  |
| Ports                        | 4 or 2 Gigabit Ethernet MAC and PHY ports.  |
| Protection                   | ESD 8KV, EFT 2KV, Over current protection   |
| Power                        |   |
| Input Voltage                | 12 V <sub>DC</sub> power input  |
| Input Connector              | 2x2 power connector (2x4 pin box wafer for option)  |
| Output PoE Power             | 15.4 watts at 48 VDC per PoE port   |
| Mechanical and Environmental |   |
| Operating Temperature        | 0 ~ 50° C (32 ~ 122° F)   |
| Storage Temperature          | -40 ~ 85° C (-40 ~ 185° F)  |
| Operating Humidity           | 5 ~ 95% Relative Humidity, non-condensing   |
| Dimensions (L x W)           | 146 x 102 mm (5.7" x 4")  |

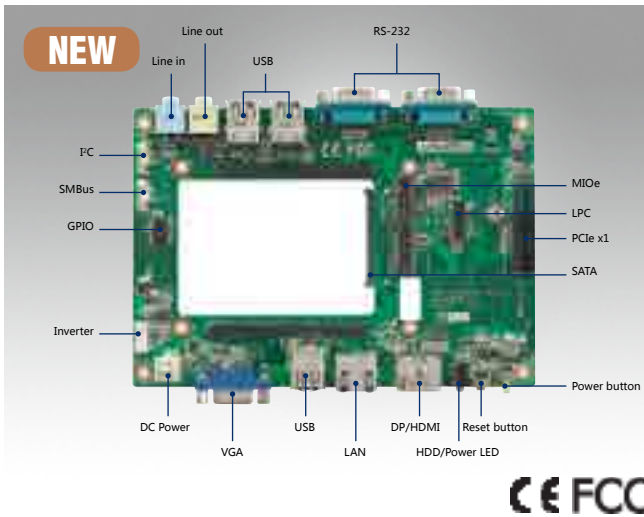
### 订货信息

| P/N           | Description                  |
|---------------|------------------------------|
| MIOe-3674-AE  | 4-port PoE ports MIOe Module |
| IMIOe-3672-AE | 2-port PoE ports MIOe Module |



# MIOe-DB2000

Evaluation Board for MIO-2262



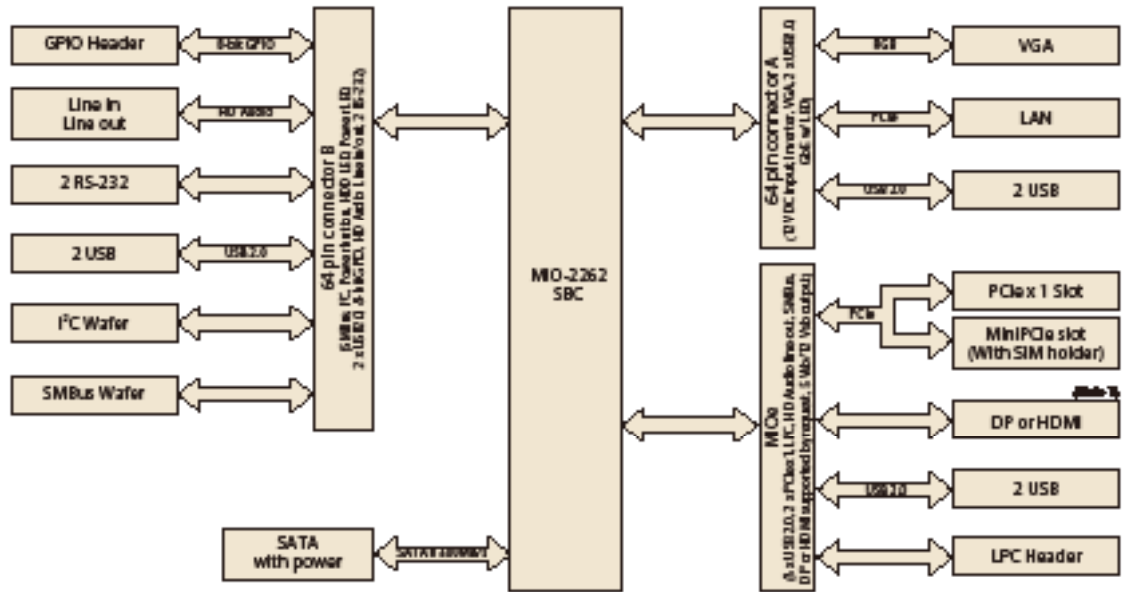
## 特点

- 完整和灵活的接口，可满足垂直应用需求
- 加快客户载板开发
- 所有电路设计参照MI/O扩展设计指南
- 使用标准EPIC尺寸
- 接口：1 x DP、1 x PCIe、1 x miniPCIe、1 x SIM卡槽、6 x USB 2.0、1 x LPC、1 x SMBus、1 x I2C、1 x 线路输出、1 x 带电SATA、8-bit GPIO、电源/HDD LED，电源/复位按钮、逆变器、+12 V电源输入

## 规格

|        |                           |   |
|--------|---------------------------|---|
| 外形     |                           | EPIC  |
| 兼容模式   |                           | MIO-2262  |
| 显示     | VGA                       | 1   |
|        | DP/HDMI                   | 1 DP or HDMI (HDMI supported by request)  |
| 存储     | SATA with Power           | 1 (connect to 2.5" HDD)   |
| 外部 I/O | 以太网                       | 1 x RJ45  |
|        | VGA                       | 1   |
|        | DP/HDMI                   | 1 (HDMI supported by request)   |
|        | USB                       | 6 x USB2.0  |
|        | LED                       | Power, HDD  |
|        | Power Button              | 1   |
|        | Reset Button              | 1   |
|        | HD Audio                  | Line in, Line out   |
|        | Serial                    | 2 x RS-232 (ESD protection for RS-232: Air gap $\pm 15\text{kV}$ , Contact $\pm 8\text{kV}$ ) |
|        | DC Power Jack             | 1 (default 2x2pin power connector, DC jack supported by request)                              |
| 内部 I/O | I <sup>2</sup> C          | 1   |
|        | SMBus                     | 1   |
|        | Inverter                  | 1   |
|        | GPIO                      | 8-bit general purpose input/output  |
|        | LPC                       | 1   |
| 扩展     | PCIe x1 slot              | 1   |
|        | Mini PCI Express          | 1 (Full-size)   |
|        | SIM card Holder           | 1   |
|        | MIOe connector            | 1   |
|        | 64pin connector           | 2   |
| 电源     | Independent Power voltage | Single +12V DC in   |
| 环境     | 工作                        | 0 ~ 60° C (32 ~ 140° F) (工作湿度: 40° C @ 95% RH Non-Condensing)                                 |
|        | 非工作                       | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing  |
| 机械     | 尺寸 (L x W)                | 115 x 165 mm (4.5" x 6.5")  |
|        | 重量                        | 0.25 kg (0.55 lb), weight of total package  |

### 结构图



Note 1 : Supported by request

### 订货信息

| 料号                | DP/HDMI | VGA | GbE | PCIe x1 | RS-232 | Full-size Mini PCIe | SIM holder | SATA II | LPC | SMBus | I2C | USB 2.0 | Audio | MIOe | Power Conn. |
|-------------------|---------|-----|-----|---------|--------|---------------------|------------|---------|-----|-------|-----|---------|-------|------|-------------|
| MIOe-DB2000-00A1E | 1*      | 1   | 1   | 1       | 2      | 1                   | 1          | 1       | 1   | 1     | 1   | 6       | Yes   | Yes  | 2x2 pin*    |

\* HDMI and DC jack supported by request

### 装箱单

| 料号                | 描述                            | 数量 |
|-------------------|-------------------------------|----|
| MIOe-DB2000-00A1E | Evaluation Board for MIO-2262 | 1  |

### 可选配件

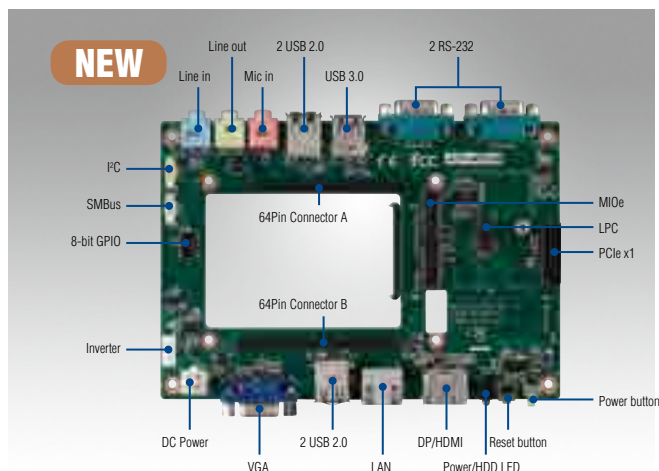
| 料号              | 描述                 |
|-----------------|--------------------|
| MIO-2262N-S6A1E | MIO-2262 N2600 SBC |
| MIO-2262N-S8A1E | MIO-2262 N2800 SBC |

### 后部I/O视图



# MIOe-DB2100

Evaluation Board for MIO-3260



## 特点

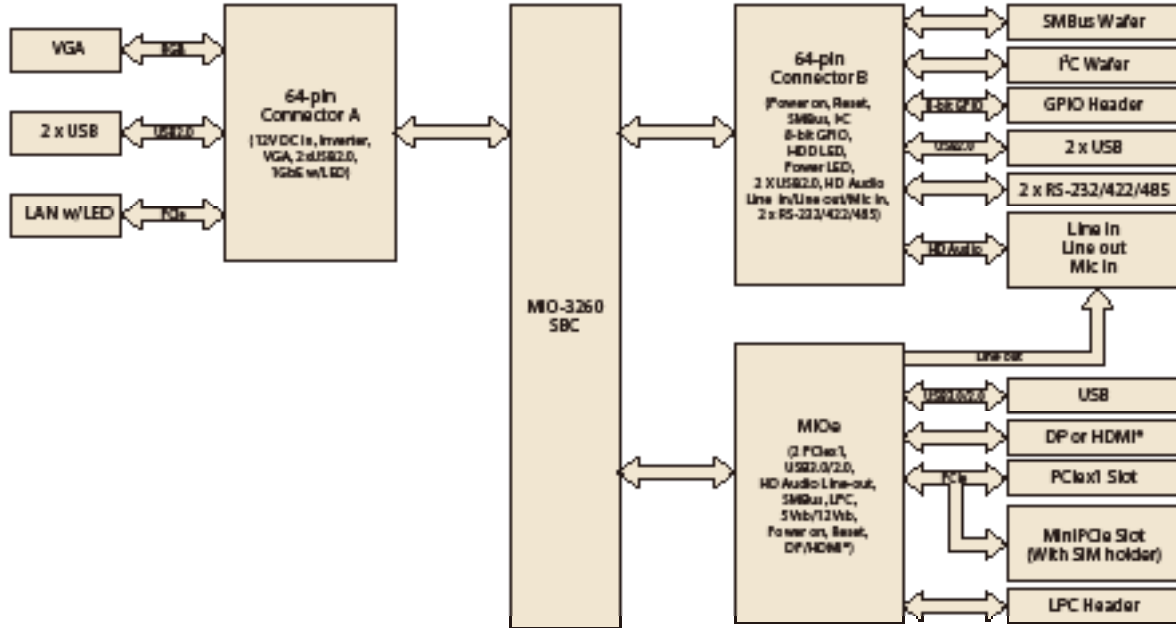
- Complete and flexible interface for verification
- Expedite customer' s carrier board development
- All circuit design follows MI/O extension design guide
- Uses standard EPIC form factor
- Interface: 1 x DP, 1 x PCIe, 1 x miniPCIe, 1 x SIM holder, 1 x USB3.0, 4 x USB 2.0, 1 x LPC, 1 x SMBus, 1 x I<sup>2</sup>C, 1 x HD Audio Line in, 1 x HD Audio Line out, 1 x HD Audio Mic in, 1 x SATA with power, 8-bit GPIO, PWR/HDD LED, PWR/Reset Button, Inverter, +12V Power in



## 规格

|        |                  |   |
|--------|------------------|---|
| 外形     |                  | EPIC  |
| 兼容模式   |                  | MIO-3260  |
| 显示     | VGA              | 1   |
|        | DP/HDMI          | 1 DP or HDMI (HDMI supported by request)                                      |
| 存储     | SATA with Power  | 1 (connect to 2.5" HDD)   |
| 外部 I/O | Ethernet         | 1 x RJ45  |
|        | VGA              | 1   |
|        | DP/HDMI          | 1 (HDMI supported by request)   |
|        | USB              | 1 x USB3.0, 4 x USB2.0  |
|        | LED              | Power, HDD  |
|        | 电源按键             | 1   |
|        | Reset 键          | 1   |
|        | HD Audio         | Line in, Line out, Mic in   |
|        | Serial           | 2 x RS-232/422/485 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)   |
|        | DC Power Jack    | 1 (default 2x2pin power connector, DC jack supported by request)              |
| 内部 I/O | I <sup>2</sup> C | 1   |
|        | SMBus            | 1   |
|        | Inverter         | 1   |
|        | GPIO             | 8-bit general purpose input/output  |
|        | LPC              | 1   |
| 扩展     | PCIe x1 slot     | 1   |
|        | Mini PCI Express | 1 (Full-size)   |
|        | SIM card Holder  | 1   |
|        | MIOe 连接器         | 1   |
|        | 64-pin 连接器       | 2   |
| 电源     | 输入电压             | Single +12V DC in   |
| 环境     | 工作               | 0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing) |
|        | 非工作              | -40° C ~ 85° C and 60° C @ 95% RH Non-Condensing                              |
| 机械     | 尺寸 (L x W)       | 115 x 165 mm (4.5" x 6.5")  |
|        | 重量               | 0.26 kg (0.57 lb), weight of total package                                    |

### 结构图



\*Supported by request

### 订货信息

| 料号                | DP/HDMI | VGA | GbE | PCIe x1 | RS-232/422/485 | Full-size Mini PCIe | SIM holder | SATA II | LPC | SMBus | PC | USB 2.0 | USB 3.0 | Audio | MIOe | Power Conn. |
|-------------------|---------|-----|-----|---------|----------------|---------------------|------------|---------|-----|-------|----|---------|---------|-------|------|-------------|
| MIOe-DB2100-00A1E | 1*      | 1   | 1   | 1       | 2              | 1                   | 1          | 1       | 1   | 1     | 1  | 4       | 1       | Yes   | Yes  | 2x2 pin*    |

\* HDMI and DC jack supported by request

### 装箱单

| 料号                | 描述                            | 数量 |
|-------------------|-------------------------------|----|
| MIOe-DB2100-00A1E | Evaluation Board for MIO-3260 | 1  |

### 可选配件

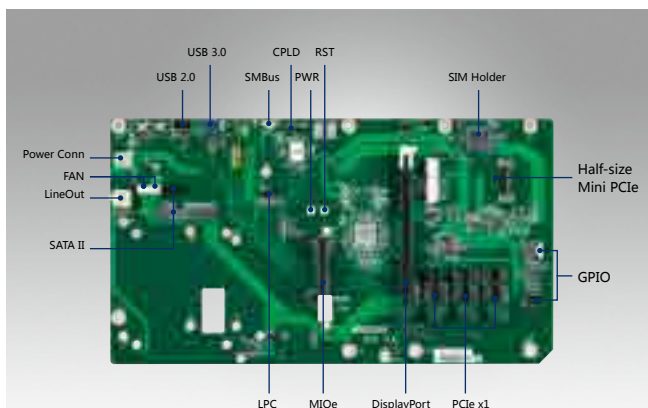
| 料号              | 描述                           |
|-----------------|------------------------------|
| MIO-3260L-S3A1E | MIO-3260 E3825/64-pin SBC    |
| MIO-3260L-S8A1E | MIO-3260 N2930/64-pin SBC    |
| MIO-3260C-S8A1E | MIO-3260 N2930/Box Wafer SBC |

### 后部 I/O 视图



# MIOe-DB5000

MIOe Evaluation Board for  
MI/O-Compact and MI/O-Ultra SBC



## 特点

- 同时支持MI/O-Compact SBC和MI/O-Ultra SBC
- 兼容MIOe，用于灵活接口验证的评估板
- 接口：1 x DP、3 x PCIe、1 x miniPCIe、1 x SIM卡槽、1 x USB 3.0、1 x USB 2.0、1 x LPC、1 x SMBus、1 x 带放大器的线路输出、1 x 带电SATA、2 x 系统风扇、+12 V电源输入

## 规格

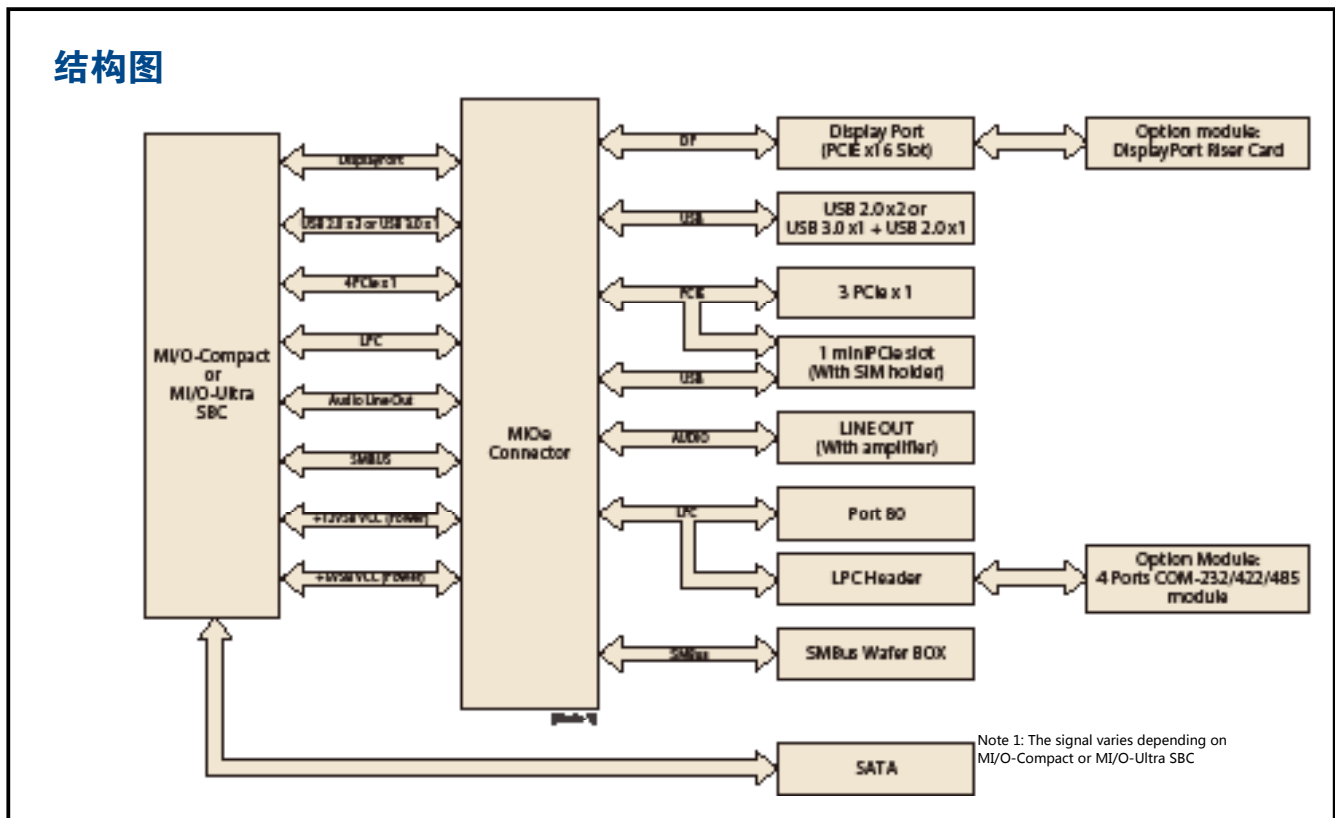
|      |                           |  |
|------|---------------------------|--|
| 外形   |                           | ATX  |
| 兼容模式 |                           | Advantech MI/O-Compact (146 x 102 mm), MI/O-Ultra (100 x 72 mm)          |
| 扩展   | DisplayPort               | 1 (only can evaluate with the 1st port of DisplayPort Riser Card)        |
|      | PCIe x1 slot              | 3 (MIOe-DB5000-01A1E has only two ports)                                 |
|      | MIOe connector            | 1  |
|      | SIM card Holder           | 1  |
|      | Full-size Mini PCIe       | 1  |
| I/O  | SATA with Power           | 1 (connect to 2.5 HDD)   |
|      | LPC                       | 1 (evaluate by using 4 ports RS-232/422/485 Module)                      |
|      | USB 2.0                   | 1  |
|      | USB 3.0                   | 1*   |
|      | LineOut                   | 1 (with amplifier AMP LM4863)  |
|      | System FAN                | 2  |
| 电源   | SMBus                     | 1  |
|      | Independent Power voltage | Single +12V DC in (2x2 power connector is only for external power input) |
| 环境   | 工作温度                      | 0 ~ 60° C (32 ~ 140° F)  |
|      | 工作湿度                      | 0% ~ 90% relative humidity, non-condensing                               |
| 机械   | 尺寸(WxD)                   | 304.8 x 170 mm (12" x 6.69")   |

\* For USB 3.0 to work depends on if MI/O SBC supports USB 3.0 or not

PS: Pinout functions depend on SBC platform chipset



### 结构图



### 订货信息

| 料号                | DisplayPort | PCIe x1 | MIOe | Full-size Mini PCIe | SIM holder | SATA II | LPC | SMBus | USB 2.0 | USB 3.0 | Audio | System Fan | Power Conn |
|-------------------|-------------|---------|------|---------------------|------------|---------|-----|-------|---------|---------|-------|------------|------------|
| MIOe-DB5000-00A1E | 1*          | 3       | 1    | 1                   | 1          | 1       | 1   | 1     | 1       | 1***    | 1     | 1          | 2x2        |
| MIOe-DB5000-01A1E | 1*          | 2**     | 1    | 1**                 | 1          | 1       | 1   | 1     | 1       | 1***    | 1     | 1          | 2x2        |

\* The DisplayPort Riser Card has both HDMI and DisplayPort. Each can be supported individually by signal setting on the MI/O main board.

\*\* MIOe-DB5000-01A1E has 2 PCIe x1 and 1 Mini PCIe.

\*\*\* For USB 3.0 to work depends on if the MI/O mainboard supports USB 3.0 or not. If the bundled MI/O main board doesn't support USB 3.0 explicitly, the USB connector supports USB 2.0 only.

### 装箱单

| 料号            | 描述                            | 数量 |
|---------------|-------------------------------|----|
| -             | MIOe-DB5000 development board | 1  |
| 1700020235-01 | Reset/Power button cable      | 2  |

### 可选配件

| 料号               | 描述                         |
|------------------|----------------------------|
| 9696EA2000E      | DisplayPort Riser Card     |
| PCA-COM232-00A1E | 4 ports RS-232 Module*     |
| PCA-COM485-00A1E | 4 ports RS-422/485 Module* |

\* Supported by request