2019 RISC/ARM
运算平台解决方案

加速您的ARM项目开发

／标准化硬件解决方案
／AIM-Linux&AIM-Android 服务
／完善的外围设备
／完善的ARM生态系统

Product Brochure Vol.2019.9

ADVANTECH
研華科技

研华嵌入式服务电话：400-001-9088
www.advantech.com.cn

ARM 开发及应用成功的关键因素

研华的 ARM 运算解决方案提供了一个开放的、统一的开发平台，在部署基于 ARM 的嵌入式应用程序时，可以减少工作量并提高资源效率。研华 ARM 运算平台提供丰富的基于最新 ARM 技术的核心模块、单板计算机和嵌入式电脑解决方案，满足了移动设备电源优化和性能优化应用的要求。今年，研华的 ARM 计算将推出三项创新，引领嵌入式 Arm 技术进入新的领域：

1. i.MX 8 系列主要应用于下一代计算性能和新的应用市场，如人工智能。
2. 开发一个新的标准 :UIO20/40-Express，这是一个扩展接口，可以方便、快速地为不同的嵌入式应用程序扩展各种 I/Os。
3. 我们发布了研华 AIM-Linux 和 AIM-Android，它们为客户提供未归档的 BSP、模块化的应用程序插件和 SDK，以加快他们的应用程序开发。

标准软件解决方案
- 核心模块
- 单板计算机
- 电脑整机

AIM-Linux
AIM-Android

AIM-Linux & AIM-Android
- 统一的嵌入式平台
- APP Add-Ons 插件 &SDK

外围设备整合
- 无线模组
- 显示模组
- 存储模组

ELA
Embedded Linux & Android Alliance

完善的生态系统
- 应用程序模块
- 软件 & 中间件

创新的 ARM 运算平台

NXP i.MX 8
赋能下一代嵌入式应用

UIO20/40-Express
加速搭建垂直应用系统

Linux
ANDROID

AIM-Linux & AIM-Android
为垂直产业提供整合的嵌入式 Linux 和 Android 应用

AIM-Linux & AIM-Android 服务

AIM (统一、工业和模块化) 是研华针对 Linux 和 Android 的嵌入式操作系统服务的核心。AIM-Linux 和 AIM-Android 的创建是通过一个灵活和模块化的框架帮助我们的客户在基于 arm 的平台上加速他们的软件开发，面向传统的工业市场长期的 BSP 维护和长生命周期需求提供支持。通过 AIM，研华为您提供了经过验证的可靠基础 (统一的嵌入式平台) 和面向行业的增值服务 (App Add-Ons 插件和 SDKs) 嵌入式 Linux 和 Android，让您专注于自己的垂直应用程序开发。

AIM-Linux 服务框架

PaaS & 云平台

WISE-PaaS IoT Edge Intelligence　WISE-PaaS/ DeviceOn　arm PELION

App Add-Ons插件

AIM-Linux/Security
- Secure Boot
- License Management
- Cipher SDK

AIM-Linux/Launcher
- Quick Boot
- Auto Run
- Multi Boot
- Splash Screen
- Boot Logo

AIM-Linux/Management
- SNMP
- Multi-Screen Control
- Audio Path Control

AIM-Linux/Distribution
- Yocto
- Debian
- Realtime

AIM-Linux/DevelopSDK
- Qt
- HTML5
- EdgeX Foundry
- Java
- Python
- Go

AIM-Linux/Diagnostic
- RF Diagnostic
- Connection Diagnostic
- System Diagnostic

AIM-Linux/Protocol
- CANopen
- J1708
- J1939
- MODBUS
- 1-Wire

Development Network

统一的嵌入式平台

Unified Core　Industrial I/O Drivers　Performance Optimization　Peripheral Integration

AIM-Android 服务框架

PaaS & 云平台

WISE-PaaS IoT Edge Intelligence　WISE-PaaS/ DeviceOn　F-Droid　SOTI MOBICONTROL　AI

App Add-Ons插件 & SDKs

AIM-Android/Security
- Anti-Virus
- Lock Device
- Location Restriction Area
- Secure On-Device Data

AIM-Android/Launcher
- Boot Animation
- Quick Setting Menu
- Status Bar
- Navigation Bar

AIM-Android/Management
- Resource Mgmt
- Applications Mgmt
- Connectivity Mgmt

AIM-Android/Maintenance
- OTA
- Remote Desktop
- App Manage

AIM-Android/Control
- Extension Port Access
- Extension Modules Access
- Device Control
- System Control

AIM-Android/Diagnostic
- RF Diagnostic
- Connection Diagnostic
- System Diagnostic

AIM-Android/Protocol
- CANopen
- J1708
- J1939
- MODBUS
- 1-Wire

Development Network

统一的嵌入式平台

Unified Core　Industrial I/O Drivers　Performance Optimization　Peripheral Integration

开发文档

ELA FORUM Embedded Linux & Android Alliance

标准化的 BSP 及软件平台

为配合客户的开发和长期的产品维护，研华提供了包括“遵循 LTS 内核的统一核心”、“平台性能优化”、“工业 I/O 驱动与外围设备集成”等可靠的基础功能。与 SoC 供应商的标准 BSP 相比，研华的 AIM-Linux 和 AIM-Android 具有统一的附加功能，为用户提供了更好的核心尺寸、性能和 I/O 集成。

标准化的内核

作为简化软件开发最重要的基础，AIM核心结构是统一的、一致的，适用于所有具有相同SOC平台的硬件。

工业 I/O 驱动

预集成最常用的是将工业I/Os(CANbus、以太网、数字I/O……)集成到AIM-Linux和AIM-Android BSP产品中，从而加速您的嵌入式Linux和Android开发。

性能优化

研华通过优化硬件特性和性能来确保客户始终能够在基于AIM-Linux和AIM-Android的应用程序上获得最佳的用户体验。我们通过硬件和软件集成加速GPU性能，并微调LAN端口性能，以实现数据最大限度地传输。

周边外设整合

在AIM-Linux和AIM-Android中对WIFI、4G模块、触摸控制器、lcd等多种外设进行验证和整合，缩短了客户的软件整合过程。

App Add-Ons & SDKs

研华在 Linux 和 Android 操作系统中都提供了七种类型的应用程序插件和 sdk。它们涵盖了针对不同工业场景的大多数嵌入式软件功能，并加速了您的应用程序软件开发。完整的文档和高效的资料库协助您更快应用。

引导程序

高灵活引导程序SDK可提供一系列引导性能的客制化，比如引导logo更改和启动屏幕定义。

AIM-Linux/Launcher
AIM-Android/Launcher

多版本 OS 支持

我们提供了许多系统发布，比如Yocto和Debian，这些系统可为你的程序开发提供更好的环境。

AIM-Linux/Distribution

管理

我们不仅提供了一系列实用程序来支持系统应用程序并且还进行资源监控和维护。

AIM-Linux/Management
AIM-Android/Management

开发 SDK

AIM-Linux集成了一系列最新的开发SDK，如Qt/HTML5/Java，让客户应用程序平稳运行。

AIM-Linux/DevelopSDK

诊断

提供RF、连接性和硬件I/O功能的完整诊断实用程序。

AIM-Linux/Diagnostic
AIM-Android/Diagnostic

维护

不同于标准的Android BSP，AIM-Android支持OS OTA功能，通过组管理在多个单元上更新Android操作系统，可以快速设置您的设备。

AIM-Android/Maintenance

协议

集成协议为不同的垂直应用程序转化特性(如CANopen和MODBUS)。

AIM-Linux/Protocol
AIM-Android/Protocol

安全

验证和内置多个安全启动功能，确保您的设备和应用程序通过入侵检测或设备锁定的标准。

AIM-Linux/Security
AIM-Android/Security

控制

在Android操作系统下，可以方便地访问控制设备、扩展端口和模块

AIM-Android/Control

AIM-Linux Roadmap

V1.0 2018/12E

App Add-Ons

- Yocto 2.1
- Debian 8
- Security Boot
- Modbus
- CANopen

Kernel V4.1

+Plus

- NXP i.MX 6
- TI AM3352
- TI AM5728

V2.0 2019/6E

App Add-Ons

- Yocto 2.4
- Debian 9
- EdgeX
- Multi-Screen Control
- License Management

Kernel V4.14 LTS

+Plus

- NXP i.MX 8
- Rockchip RK3288

V3.0 2019/12E

App Add-Ons

- Yocto 2.5
- Debian 10
- SNMP Manger
- Data Services with EdgeX
- Cipher SDK

Kernel V5.X

+Plus

- Rockchip RK3399

System Integration

- New Peripheral Module List
- New Display & Touch List

AIM-Android Roadmap

V2.1 2018/12E

App Add-Ons & SDKs

- Software Development Kit 2.1
- System Property 2.1
- Customization Tool 2.1

Android 6.0 Core

+Plus

- NXP i.MX 6
- Intel Bay Trail
- Intel Cherry Trail (AIM8)

V3.0 2019/6E

App Add-Ons & SDKs

- Software Development Kit 3.0
- System Property 3.0
- Customization Tool 3.0
- OTA
- Remote Desktop

Android 8.0 Core

+Plus

- Intel Apollo Lake
- Rockchip RK3288

V3.1 2019/12E

App Add-Ons & SDKs

- Software Development Kit 3.1
- System Property 3.1
- Customization Tool 3.1
- OTA
- Remote Desktop
- App Manage

Android 8.0 Core

+Plus

- NXP i.MX 8
- Rockchip RK3399

System Integration

- New Peripheral Module List
- New Display & Touch List

标准化硬件解决方案

研华科技已经与 ARM 合作超过 10 年，从 Cortex-A8、A9 开始到 A72 架构。我们相信，标准化的规格是使 ARM 技术在嵌入式市场更受欢迎的关键。遵循这一理念，研华推出了模块化电脑 (Computer on- module)、单板电脑 (Single Board Computer) 和 System，以加快 ARM 技术在嵌入式市场的应用。

最新平台：NXP i.MX 8 系列

i.MX 8 系列的 SOCs 是 NXP 最新的也是第一个 Armv8-A 64 位应用程序处理器，具有多达 6 个 Armv8-A 内核和另外两个 M4 内核。这种新设计提供高性能的高级图形、基于硬件的虚拟化和增强的安全性，产品寿命为 10-15 年并具有工业级质量。i.MX 8 系列是人工智能，高级图形，机器视觉，汽车，安全和其他工业应用的理想选择。

综合软件服务

- 支持多 OS
- 长周期 BSP
- AIM-Linux 和 AIM-Android

可靠的硬件设计服务

- 载板参考设计
- 设计审核
- 咨询服务

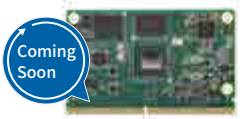
可靠的外围设备整合

- 工业触摸屏
- WIFI, 4G 模块
- 存储模块

NXP i.MX 8 产品列表

Qseven
ROM-7720
▪ NXP i.MX 8 Cortex-A72 1.6GHz Quad Max ▪ Strong image processing capability ▪ Designed for video analysis

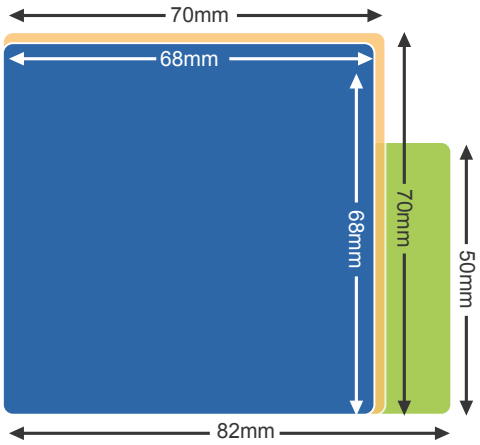
SMARC 2.0
ROM-5720
▪ NXP i.MX 8M Cortex-A53 1.5GHz Quad/Dual cores ▪ Outstanding graphic performance ▪ Designed for multimedia applications



SMARC 2.0
ROM-5620
▪ NXP i.MX 8X Cortex-A35 1.2GHz Quad plus ▪ Low power optimized performance ▪ Designed for industrial control and automation applications

Qseven
ROM-7421
▪ NXP i.MX 6 Cortex-A9 1GHz Dual Plus/Quad plus ▪ Strong multimedia performance ▪ Designed for Kiosk and HMI

ARM 核心模块



ARM 核心模块是一种将 CPU 模块上的所有主要组件紧密整合在一起的核心模块，它可以兼容客户不同应用的 I/O 载板。模块化设计帮客户构建自有应用程序的载板并快速上市。

RTX (Advantech)
68mm x 68mm

Qseven
70mm x 70mm

SMARC
82 mm x 50 mm

Qseven

Qseven 是一个核心模块的标准规格，它由 SGET 定义并基于高速 MXM 系统连接器指定输出。Qseven 适用于手持、HMI 和数字标牌等应用领域。

Compact　Fanless　Flexible

SMARC

研华加入 SGET 联盟并参与 SMARC 规格的定义。这个名为 SMARC(智能移动架构) 的新全球标准是基于超低功耗嵌入式应用程序的 ULP-COM 协议。

Compact　Fanless　Dual Lan

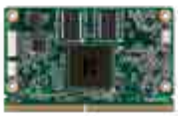
RTX

研华最初引用 RTX 2.0(加固技术扩展)，这是一个 ARM-based 的标准平台，用于加固应用，如军事、物流和交通。

Anti-vibration　Anti-oxidation　Wide Temperate

RTX

NXP i.MX 6 产品列表



SMARC	RTX
ROM-5420	ROM-3420
▪ NXP i.MX 6 Cortex-A9 1GHz Dual/ Quad cores ▪ Strong multimedia performance ▪ Designed for Kiosk and HMI	▪ NXP i.MX 6 Cortex-A9 1GHz Dual/ Quad cores ▪ Outstanding graphic performance ▪ Designed for rugged applications

TI 产品列表

Qseven	RTX
ROM-7510	ROM-3310
▪ TI Sitara AM5728 Cortex-A15 Dual cores ▪ Outstanding computing ability ▪ Designed for video surveillance applications	▪ TI Sitara AM3352 Cortex-A8 1GHz Single core ▪ Wide range temperature and power input support ▪ Designed for automation and railway application

三种不同规范的核心模块比较

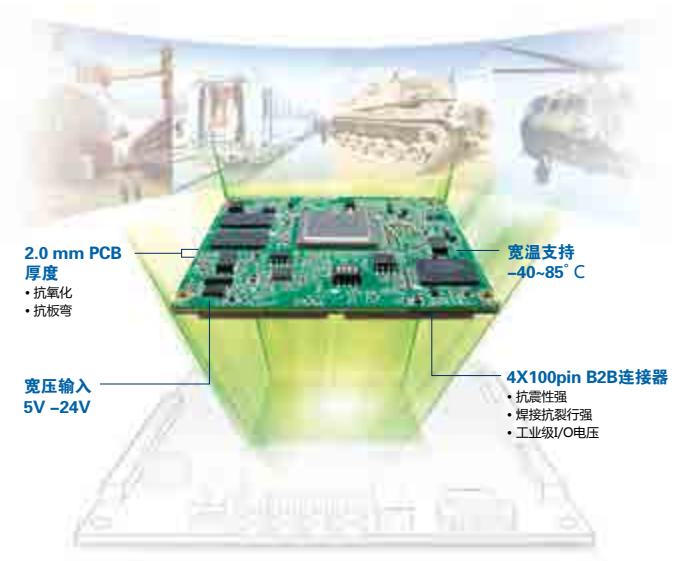
研华科技已经与 ARM 芯片厂商合作超过 10 年，从 Cortex-A8、A9 开始到 A72 架构。我们相信，标准化的规格是使 ARM 技术在嵌入式市场更受欢迎的关键。遵循这一理念，研华推出了模块化电脑 (Computer on- module)、单板电脑 (Single Board Computer) 和 System，以加快 ARM 技术在嵌入式市场的应用。

平台	Qseven 2.0	SMARC 1.0	RTX 2.0
接口	MXM 2.0	MXM 3.0	MATSUSHITA B2B
针脚数	230	314	400
应用	便携式	便携式	坚固型
PCB厚度	1.2mm	1.2mm	2.0mm
插拔力	55~60N	55~60N	98N
接口工作温度	0~85°C	0~85°C	-40~85°C

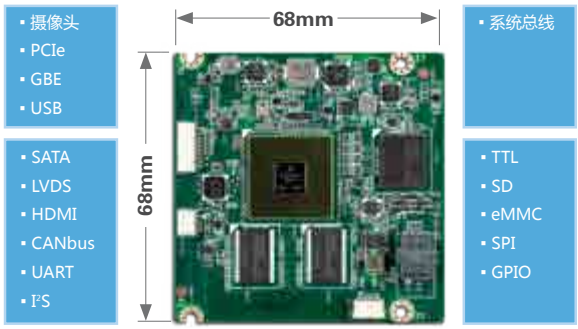
RTX 核心模块

研华推出了 RTX(RISC Technology eXtended) 规范，这是一款专为坚固型应用设计的 RISC 标准平台。通过创新机械和电子设计，采用 4*100 Pin 的板对板的连接器，RTX 可适用于复杂、恶劣的环境，如军事、物流、运输 / 车队管理以及许多其它的工业应用。

RTX 的优势



RTX 2.0 规范



研华产品

RTX 2.0 核心板

ROM-3420

处理器 :NXP I.MX6

ROM-3310

处理器 : TI 3352

RTX 3.0 核心板

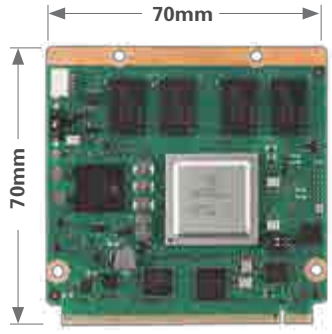
Coming Soon

处理器 : NXP I.MX8 系列

Qseven 核心模块

研华 Qseven 核心模块将新概念融入超小的尺寸规格，支持 NXP i.MX 系列，TI Sitara 系列主芯片。不同于传统的板对板连接器，Qseven 模块将所有重要讯号与接口透过 PCB 边缘的金手指连接器传送至载板，不仅简化了安装程序，也节省了板对板连接器的成本。Qseven 模块具有 70mm x 70mm 的尺寸，能为行动与手持式应用提供最符合成本 / 效率的解决方案。

• 低成本 • 低功耗 • 支持传统接口 • 快速串行接口



• 摄像头	• SATA	• UART
• PCIe	• LVDS	• I²C
• GBE	• HDMI	• SPI
• USB	• CAN	• GPIO

研华产品

研华典型 Q7 核心模块

ROM-7720
处理器 : NXP I.MX8

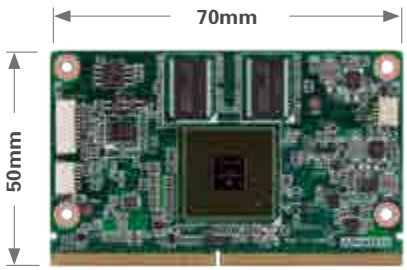
ROM-7421
处理器 : NXP I.MX6

ROM-7510
处理器 : TI AM5728

SMARC 核心模块

研华加入 SGET 协会，参与 SMARC 外形规格的定义。SMARC (Smart Mobility Architecture) 品牌名下的新全球标准基于 ULP-COM，这是目前用于超低功耗模块化电脑的词汇。其优化模块设计有三种方法 :

• 优化 RISC/ARM 针脚定义 • 便捷的锂电池硬件设计 • 超薄、半长模块



• 摄像头	• SATA	• SDIO
• PCIe	• LVDS	• I²C
• GBE	• HDMI	• SPI
• USB	• CAN	• GPIO

研华产品

研华典型 SMARC 核心板

ROM-5420
处理器 : NXP I.MX8M

ROM-5710
处理器 : NXP i.MX8X

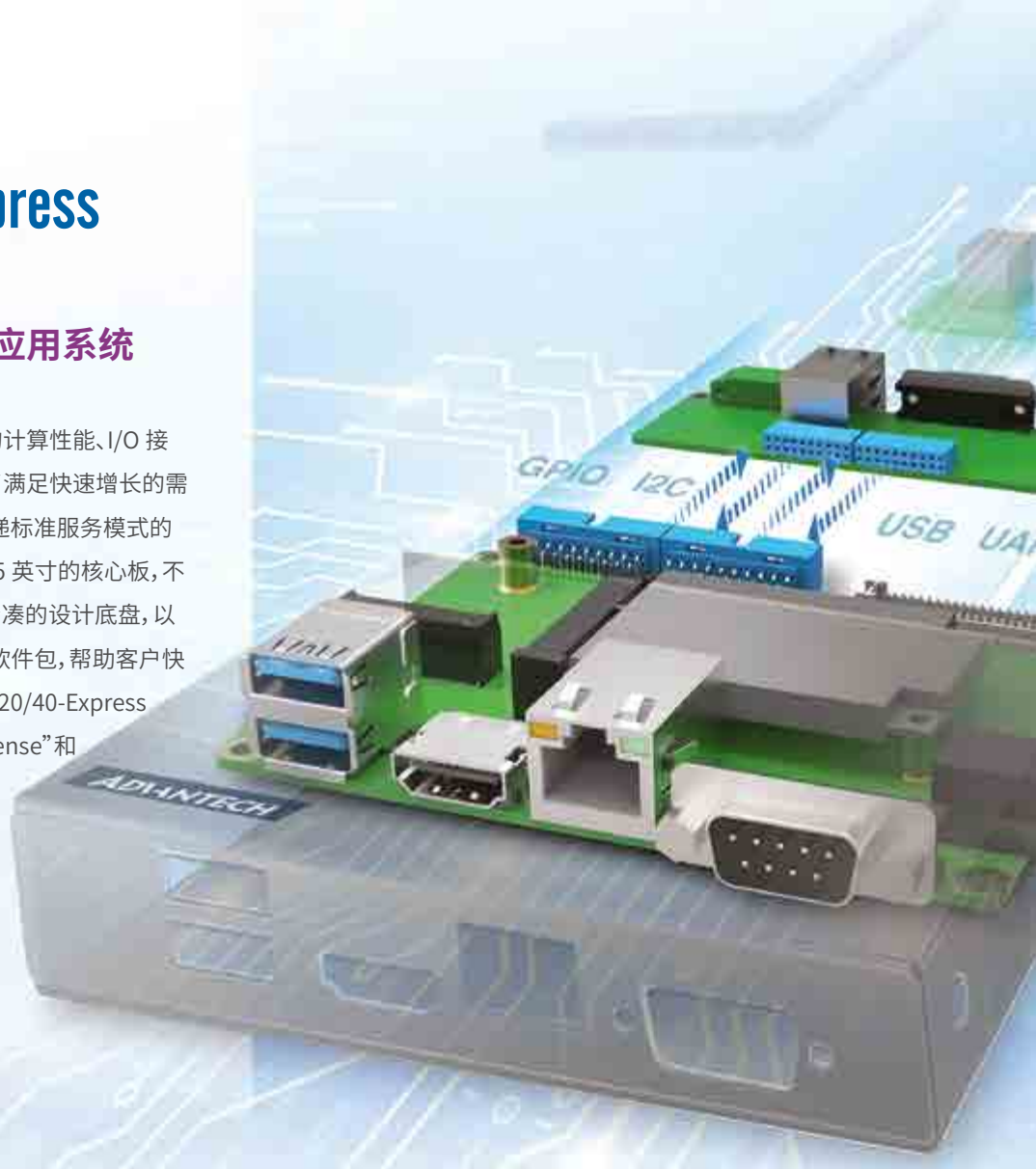
即将上市

ROM-5620
处理器 :NXP I.MX6

UIO20/40-Express 扩展方案

快速构建您的行业应用系统

不同的物联网应用需要不同的计算性能、I/O 接口、无线连接和软件功能。为了满足快速增长的需求，研华发布了 UIO20/40 快递标准服务模式的最佳解决方案。它包括一个 2.5 英寸的核心板，不同的 UIO20/40 I/O 扩展卡，紧凑的设计底盘，以及 AIM-Linux/ AIM-Android 软件包，帮助客户快速构建基于 ARM 的系统。UIO20/40-Express 还提供了“WISE-PaaS EdgeSense”和“Device On”物联网云框架，将客户当前的应用移植到物联网应用。UIO20/40-Express 是快速轻松构建基于 ARM 的物联网解决方案的最佳工具。



2.5寸主板

RSB-3430DL-MDA1E
- NXP i.MX 6 Dual-lite 1GHz
- 1 HDMI, Dual LVDS for full HD display
- 2 USB 2.0, 1 RS-232/422/485

2019 Q4

RSB-3710CD-MDA1E
- NXP i.MX 8M Dual 1.5GHz
- 4K HDMI, Dual LVDS for 2K
- 2 USB 3.0, 1 RS-232/422/4855

多种UIO扩展卡

UIO-4030
RS-485 x 1, RS-232 x 1, GPI x 4, GPO x 4

UIO-4032
USB 2.0 x 2, RS-232 x 2, GbE x 1

UIO-4034
CAN x 1, RS-232 x 2

垂直行业应用系统

EPC-R3430
for I/O Board UIO-4030

EPC-R3432
For I/O Board UIO-4032

EPC-R3434
For I/O Board UIO-4034

2.5”
紧凑结构

- 2.5寸PICO-ITX主板
- 统一的边缘I/O定义
- 完善的无线扩展

丰富I/O选项

- 统一的I/O扩展
- 垂直聚焦I/O扩展板
- 参考设计及定制服务

统一的软件包

- AIM-Linux和AIM-Android
- 支持BSP更新和长生命周期
- 支持WISE-PaaS云连接服务

统

AIM-Linux & AIM-Android

模块化框架

有效的资源配置

工业增值 APP&SDK

加速开发

长生命周期 BSP 维护

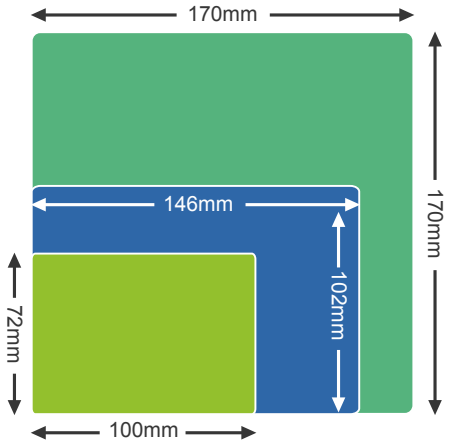
可靠的系统

WISE-PaaS/ DeviceOn

- 安全的自动开机设备
- 远程设备监控
- 软件远程更新

专注垂直行业应用的单板计算机

研华 Arm-based 单板计算机 (SBC Computer) 提供从 2.5 英寸 (100x72mm) 到 mini-ITX (170x170mm) 不同尺寸规格。研华嵌入式单板电脑具有标准的规格、紧凑的尺寸、丰富的 I/O、低功耗设计和易于扩展的功能。有了以上优点，研华单板电脑产品将是您的嵌入式应用程序的最佳选择。



2.5" SBC
100mm x 72mm

3.5" SBC
146mm x 102mm

mini-ITX
170mm x 170mm

工业 4.0

RSB-4410

- NXP i.MX 6 Cortex-A9 1GHZ Dual/Quad cores
- High resolution 3-display support
- Yocto Linux/Android support

RSB-4411

- NXP i.MX 6 Cortex-A9 1GHZ Dual/Quad cores
- High resolution 3-display support
- Yocto Linux/Android support

RSB-4220

- TI Sitara AM3352 Cortex-A8 1GHz Single Core
- Up to 5 COM and 4GPI/4PGO with Isolation
- Yocto Linux support

RSB-4221

- TI Sitara AM3358 Cortex-A8 1GHz Single Core
- Dual Ethernet and M.2 E-key for wireless connection
- Yocto Linux/Android support

多媒体

RSB-4680

- Rockchip RK3288 Cortex-A17 1.6GHz Quad cores
- 4K display and rich I/O for device connection and control
- Debian Linux/Android support

RSB-6410

- NXP i.MX 6 Cortex-A9 1GHZ Dual/Quad cores
- Rich I/O for device connection and control
- Yocto Linux/Android support

网络服务器

RSB-3410

- NXP i.MX 6 Cortex-A9 1GHz Dual Lite cores
- Dual mini-PCIe slots for wireless connection
- Yocto Linux/Android support

RSB-3430

- NXP i.MX 6 Cortex-A9 1GHz Dual Lite cores
- Dual mini-PCIe slots for wireless connection
- Yocto Linux/Android support

优化的整机方案

UBC 工控整机系列

基于 ARM 的 UBC (工控整机) 系列和 EPC-R 系列是为满足垂直市场的需求而设计的。通过优化 I/O 配置，可在工厂、商店、停车场、电梯或任何地方安装 UBC 工控整机。

全系列随选即用解决方案

EPC-R4680 和 EPC-R6410 是基于 ARM 的数字标牌播放器，采用车载 DDR3 和 eMMC 多媒体增强处理器。高图形性能和内置的标牌播放器软件，帮助客户随时进行多媒体广告播放。UBC-330 和 UBC-200 是为自动化和工业控制而设计的最紧凑的盒式计算机。丰富的 I/O 多达 5 x COM 端口，整合所有设备并由一台主机 PC 控制，有效的节能并节省成本提升效益。EPC-R3320 和 UBC-220 提供高速网络连接，使您的多任务应用程序平稳和快速运行。最大功耗在 5 瓦以下，研华的 ARM 工控整机系统是您 24/7 计算系统理想选择。

工业 4.0

- 丰富的I/O设备控制
- ESD / EMI /隔离保护
- 易于安装/安装设计

UBC-330

- TI Sitara AM3352 Cortex-A8 1GHz
- Sufficient I/O for device control
- Yocto Linux support

TAIWAN EXCELLENCE 2013

UBC-200

- NXP i.MX 6 Cortex-A9 1GHz Dual/Quad cores
- Ultra high speed Ethernet & wireless connectivity
- Yocto Linux/Android support

多媒体

- 优秀的图形性能
- 高分辨率多显支持
- 节能技术

EPC-R4680

- Rockchip RK3288 Cortex-A17 1.6GHz Quad cores
- 4K display and rich I/O
- Android/Debian Linux suppot

EPC-R6410

- NXP i.MX 6 Cortex-A9 1GHz Dual/Quad cores
- Powerful multi-display capability, multiple I/O, and wireless connectivity
- Yocto Linux/Android support

网络连接

- 高速千兆以太网
- 稳定的无线连接
- 卓越的数据处理系统性能

EPC-R3220

- TI Sitara AM3352 Cortex-A8 800MHz
- Dual Ethernet and WiFi/4G solution ready for IOT application
- Yocto Linux support

TAIWAN EXCELLENCE 2013

UBC-220

- NXP i.MX 6 Cortex-A9 1GHz Dual Lite cores
- Sufficient I/O for device control
- Yocto Linux/Android support

完善可靠的外围设备

鉴于外设集成以及驱动支持不够成熟或开发不完善的影响，ARM 应用开发遭遇重重困难。
大多数工程师都选择依赖尚未充分验证的开放源代码驱动，且往往需要进行一定修改才能集成于不同的平台。为使应用开发更为简便，研华将兼容外设整合至内核源代码以及随附详细文档中以进行外设集成，从而有效简化 ARM 平台集成流程。

可靠工业级外围设备

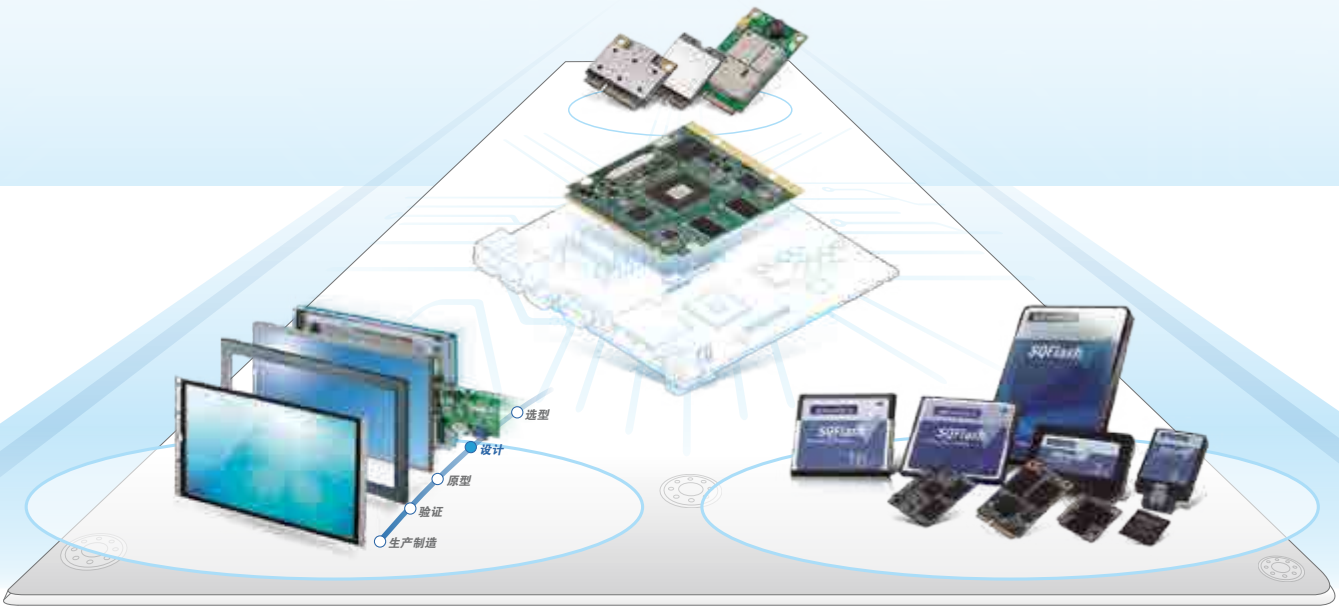
研华提供高质量品牌外围设备，同时还提供长供货周期、全球质保、快速分发以及灵活客制化服务。工业级外围设备包括显示屏套件、RF 模块、存储设备和扩展卡。

整合不同 OS 驱动

为了帮助用户快速连接外设，我们已将驱动预置于 Linux 内核，因此可节约交叉编译和驱动程序移植的时间。驱动已经在 Android 和 Windows 等不同操作系统中进行过验证。

驱动移植和设备测试文档

为帮助用户集成更多外设，研华乐于分享驱动集成的专业技术，藉此帮助用户将驱动移植到自有平台。我们提供的测试工具，命令和示例代码，均可在研华在线论坛中轻松获取；同时，研华也为需要帮助的客户提供咨询服务。



WiFi Module

EWM-W142H01E

1750005885	RF Cable
1750000318	Antenna

WiFi/BT Combo 模块

EWM-W157H01E

1750007965-01	RF Cable
1750002842	Antenna

蜂窝模块

EWM-C117 series

1750007156-01	RF Cable
1750005865	Antenna

GPS 模块

EWM-G108H01E

1750006264	RF Cable
1750007991-01	Antenna

电源适配器

96PSA-A36W12R1

ADAPTER 100-240V 36W
12V 3A DC PLUG 90°

面板

IDK-1115R-50XGA1
15" 1024 x 768 LED 面板，
500 nits with 5W resistive touch

IDK-1107WR-40WVA1E
7" 800 x 480 LED 面板，
400 nits 带 4WR 触摸屏

IDK-1107WP-50WVA1E
7" 800 x 480 LED 面板，
500 nits 带投射电容式触摸屏

IDK-1115P-50XGA1E
15" 1024 x 768 LED 面板，
500 nits 带投射电容式触摸屏

96LEDK-A070WV40NB1
7" 800 x 480 LED 面板，400 nits
无触摸屏

96LEDK-A190SX35NF1
19" 1280 x 1024 LED 面板，
350 nits 无触摸屏

嵌入式 Linux & Android 联盟

嵌入式 Linux 和 Android 联盟 (ELAA) 是一个致力于推动工业嵌入式系统中嵌入式 Linux 和 Android 核心开放体系架构和板的标准统一的行业联盟。

ELAA 性能

统一的体系结构

ELAA统一开发平台提供了跨不同工业嵌入式应用程序的统一硬件和软件体系结构。用户可以复制项目经验提升工作效率。

多种软件

通过联盟成员的授权，ELAA在各种操作系统、内核、驱动程序和工业应用程序中提供丰富的软件产品。

长生命周期

在整个SoC生命周期内为会员和客户提供硬件平台、内核和固件升级。

更快的上市时间

预集成的硬件和软件平台，加快了POC到MP的周期。

外围设备整合

ELAA统一开发平台整合了多个工业外围设备，并在不同的操作系统和硬件平台上进行验证。

全球合作伙伴生态系统

通过全球合作伙伴的供应链支持客户的业务发展和推广。

全面 ARM 开发套件和设计协服务，完美适用紧凑型钞票清分机

过去，钞票清分机仅用于银行等大型商业机构,因此其体积大小并无影响。然而，随着越来越多的商店和公司也频频收到假币，对于能够保护其利益的小尺寸钞票清分机的需求则变得尤为迫切。

解决方案

研华 ROM-7420 是一款采用 ARM 技术的经济高效型模块化电脑。丰富的 I/O 和卓越的系统性能可以保证钞票识别设备的正常运行，然后顺利将钞票按照国家或者面值进行分类。高级图形引擎可通过验钞机设计者开发的图形分析程序来辨别假钞。

开发套件用于原型

研华提供 ROM-7420 开发套件，以期能够以简单、快速的方式进行性能评估。该开发套件包含客户所需的所有项，例如，COM 模块及相应载板、12V AC/DC 电源适配器、连接外围设备的线缆、以及用于显示屏和触摸面板开发的 LED 面板。

研华设计协助服务

在开发过程中，如果发生致命性问题将可能导致发布日程受到严重影响。研华专业技术支持团队将为您排忧解难，助您完成软硬件调试。通过提供及时技术支持和上门服务，客户可以快速解决所有问题并使项目重新走上正轨。

ROM-7420

- Qseven 1.2 模块化电脑
- NXP i.MX6 plus 双 / 四核 1GHz
- DDR3 1 GB/2 GB; 4 GB e.MMC 闪存
- 丰富 I/O，用于设备控制
- 7 年长供货周期

IDK-1107

- 7 inch 高亮度 LED
- 4 线电阻式触摸屏
- 可靠触摸屏组装
- 标准两年质保

坚固型 RTX 规格解决方案专为铁路监控系统而打造

中国铁路系统具有良好的便利性和广泛的经济效益，近年来发展势头非常迅猛。目前，铁路系统已成为主要公共交通系统之一，每天运载数百万乘客。然而，找到一款适用于火车并包含数据收集、处理和存储的总体解决方案仍然非常必要。另外，如何保障数据/网络的安全性和可靠性也向我们提出了重大挑战。

解决方案

研华 ROM-3420 是 RTX 2.0 规格的超低功耗模块化电脑，专为具有抗振、抗氧化和抗腐蚀特性的坚固应用而设计。该产品不仅可为铁路监控系统提供可靠的核心计算能力和稳定的网络连接，而且还可通过研华内置软件 API 有效保证数据流的安全。工业级总体解决方案与 SSD、WiFi 2.4GHz 模块等研华外设一起，成功为铁路监控系统中的数据采集、处理和管理提供有力保障，而且提升了系统日常运作的平稳性与性能可靠性。

坚固耐用，支持宽温工作

研华 ROM-3420 RTX 模块设有 4 个强固型 B2B 接口、用于数据采集的 SATA 接口，并支持宽温工作；对于那些需在恶劣环境地区中连续运行的铁路系统而言，其稳定性需求能够得到可靠保障。

ROM-3420

- Freescale ARM Cortex ™ -A9 i.MX6 Dual 1 GHz 高性能处理器
- 板载 DDR3 1 GB 内存 / 4GB flash
- 支持宽范围电源输入 5V~24V

载板解决方案服务

研华通过提供载板参考原理图、设计指南与检查表来加速载板开发，以便扩展模块的可用性。除了文档以外，我们还分享包含收发器和发射器 IC 推荐选项在内的设计参考。客户完成载板原理图后，研华将帮助客户进行审查并调试系统，并将提出生产建议帮助客户产品快速上市。

UIO20/40-Express 城市自行车服务站解决方案

由于空气污染问题和短途通勤者的增长，中国各地设立了越来越多的城市自行车站。自行车服务站急需计算:高的电力消耗并提供如显示、无线连接的多种I/O接入。还需要云服务器和客户端框架来监控状态和测量客户端站点和服务器之间的反应。然而，为最终应用程序整合寻找合适的解决方案需要花费大量时间。

解决方案

研华提供了一个特有的解决方案，包括 2.5 英寸主板、各种 uio20/40 express 卡和一个紧凑的机箱。除了硬件解决方案，我们还集成了 AIM-Linux/Protocol、AIM-Linux/Launcher 和 WISE-PaaS/DeviceOn 来进行远程管理和配置部署。研华提供了基础的硬件和软件包，以确保解决方案部署简单、快速和可靠。

UIO20/40-Express 快速系统开发解决方案

RSB-3430 是基于 NXP i.MX 6 芯片开发，支持 LVDS 和 HDMI 显示功能，M.2 和 mini-PCIe w/ SIM 实现完整的无线连接，USB 2.0, RS-232/485 可进行设备控制，可通过 UIO20/40 Express 接口设计与我们的快速卡进行 I/O 扩展。研华还整合了一个紧凑的机箱解决方案。

UIO20/40-Express: RSB-3430 + UIO-4032 + EPC-R3432

- NXP i.MX 6 Dual-lite cores 1GHz
- Dual LVDS for full HD display
- 1 HDMI, 2 USB 2.0, 4GPI, 4GPO, 1 GbE
- 1 RS-232/422/485, 1 RS-485, 1 RS-232

统一的软件服务

研华的 AIM-Linux 嵌入式软件集成协议和 Launcher app 插件简化了编辑框控制通信和部署配置。在设备管理方面，我们提供 WISE-PaaS/DeviceOn 实现设备的集中管理，并提供远程电源功能，在夜间切换到太阳能电源库存，降低总功耗。

AIM-Linux/ Launcher

- Quick Boot
- Multi Boot
- Boot Logo
- Auto Run

AIM-Linux/ Protocol

- CANopen
- J1708
- J1939
- MODBUS
- Wire

WISE-PaaS/ DeviceOn

- Securely Instant Onboard
- Real-time Actions
- Visualized Operations

适用于 LTE 信号采集模块应用的高性能核心模块

人们经常在某些地方聚集在一起庆祝重大节日、国定假日和庆祝活动。保证手机信号质量和LTE网络连接，已成为LTE服务企业面临的一个特殊挑战。运营商需要利用FFT技术分析从时域到频域的信号，然后发送带有移动基站的车辆来保证LTE的连接。

解决方案

研华的 ROM-7720 通过 NXP i.MX 8 处理器提供高级边缘计算性能。它不仅是一个基于 ARM 的 CPU 与 DSP 进行 FFT 计算，而且还包括 AIM-Linux，新的附加软件功能，其中包含简易的 API 在维护开发和远程控制服务。ROM-7720 采用 i.MX 8 异构处理器提供了高稳定性、高性价比和绝佳的操作性能。

快速评估开发套件

研华提供了 ROM-7720 开发套件，让测试和构建原型更快速。开发套件包括 ROM-7720 Q7 模块、载板和所有必备的 I/O 电缆、面板、子板和适配器。除 H/W 外，我们亦提供即时可用的 BSP 及在线开发网站，协助开发者进行评估。

AIM-Linux App 插件

研华提供了 7 种类型的 App 插件和 SDK，可满足工业场景中嵌入式软件使用的大部分需求，并加速您的软件开发，例如完整的 RF 诊断工具、连接、系统信息和嵌入式应用程序的集成协议转换服务。

ROM-7720

- Qseven 2.1 Computer on Module
- NXP i.MX 8 QuadMax Processor
- LPDDR4 4GB, 16 GB eMMC Flash Memory
- 4K H.265 decoder, HD H.264 Encoder
- Yocto Linux and Android Support

AIM-Linux/Protocol

- CANopen
- J1708
- J1939
- MODBUS
- Wire

AIM-Linux/Diagnostic

- RF Diagnostic
- Connection Diagnostic
- System Diagnostic

产品选型指南

Computer-on-核心模块

即将上市 NEW





型号名		ROM-3310	ROM-3420	ROM-5420 B1	ROM-5620	ROM-5720
规格		RTX V2.0	RTX V2.0	SMARC V1.1	SMARC V2.0	SMARC V2.0
处理器系统	CPU	TI AM3352 Cortex-A8 1 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz	NXP Arm Cortex-A35 i.MX8X 1.2 GHz	NXP Arm Cortex-A53 i.MX8M 1.5 GHz
内存	技术	DDR3 800 MHz	DDR3 1066 MHz	DDR3 1066 MHz	LPDDR4 1200 MHz	LPDDR4 1866 MHz
	容量	On-board DDR3 512 MB	On-board DDR3 1 GB	On-board DDR3 1 GB	On-board LPDDR4 2 GB	On-board LPDDR4 2 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	16 GB eMMC NAND Flash for O.S. and 8MB QSPI NOR FLASH for Advantech boot loader	16 GB eMMC NAND Flash for O.S. and 8MB QSPI NOR FLASH for Advantech boot loader
图形	LVDS	-	1 x 24-bit LVDS, 1366 x 768 at 60Hz	1 x 24-bit LVDS, 1366 x 768 at 60Hz	2 x single channel LVDS*	-
	MIPI-DSI	-	-	-	2 x 4-lane MIPI DSI*	1 x 4-lane MIPI DSI
	HDMI	-	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	-	4096 x 2160 at 60 Hz
	Parallel RGB	1 x 24-bit TTL, 1366 x 768 at 60Hz	1 x 24-bit TTL, 1920 x 1200 at 60Hz	1 x 24-bit TTL, 1920 x 1200 at 60Hz	-	-
	VGA	-	-	-	-	-
	图形引擎	Direct3D Mobile, OGL-ES 1.1 and 2.0,OpenVG 1.0, and OpenMax	2 x IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	2 x IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	Vivante GC7000 Lite	GC7000L/GC7000LVX
	H/W Video Codec	-	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263
以太网	芯片组	TI AM3352 Integrated RGMII	NXP i.MX6 integrated RGMII	NXP i.MX6 integrated RGMII	2 x NXP i.MX8X Integrated RGMII	1 x NXP i.MX8M integrated RGMII 1 x RTL8119I PCIE GbE controller
	速度	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
RTC		Yes	Yes	Yes	Yes	Yes
看门狗计时器		1~6553s, default 60s, power on/off 1s	256-level timer interval, from 0 ~ 128 sec	256-level timer interval, from 0 ~ 128 sec	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s
I/O	PCIe	-	1 PCIe 1x	1 PCIe 1x	1 PCIe 1x	1 PCIe 1x
	SATA	-	1 SATA II	1 SATA II	-	-
	USB	1 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG	1 USB 2.0, 1 USB 2.0 OTG	1 USB 3.0, 2 USB 2.0 OTG	2 USB 3.0, 4 USB 2.0, 1 USB 2.0 OTG
	Audio	I2S	I2S	I2S	2 x I2S	2 x I2S
	SPDIF	-	-	1	-	-
	SDIO	1	1	1	1	1
	Serial Port	4 UART (1 x 4-wire, 3 x 2-wire w/ 3.3V)	3 UART (3 x 4-wire w/ 3.3V)	4 UART (2 x 2-wire, 2 x 4-wire w/ 3.3V)	3 UART (1 x 4-wire, 2 x 2-wire)	4 UART (1 x 4-wire, 3 x 2-wire)
	SPI	1	2	4	2	2
	CAN	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B	2 x CAN bus 2.0 A/B	2	-
	GPIO	10	10	12	12	12
	I2C	1	4	5	4	4
	Camera Input	-	1 x 4-Lane MIPI CSI-2	1 x 4-Lane MIPI CSI-2	1 x 4-Lane MIPI CSI-2	1 x 4-Lane MIPI CSI-2 1 x 2 Lane MIPI CSI-2
	System Bus	-	Address: 26 bits Data: 16 bits	-	-	-
	Touch	-	-	-	-	-
	Keypad	-	-	-	-	-
	PWM	-	-	-	-	-
电源	电源电压	5 ~ 24 V	5 ~ 24 V	3 ~ 5.25 V	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium-ion cells	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium-ion cells
	功耗	2.11W (Max)	3.3W (Max)	3.4W (Max)	TBD	TBD
环境	工作温度	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C / -40 ~ 85 °C	0~60°C / -40~85°C	0~60°C / -40~85°C
	工作湿度	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5% ~ 95% Relative Humidity, non-condensing	5% ~ 95% Relative Humidity, non-condensing
物理特性	尺寸 (W x D)	68 x 68 mm	68 x 68 mm	82 x 50 mm	82 x 50 mm	82 x 50 mm
操作系统		Linux	Linux Android	Linux Android	Linux Android	Linux Android
认证		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

*LVDS & MIPI-DSI are shared interface




型号名		ROM-7420	ROM-7421	ROM-7510	ROM-7720
规格		Qseven V1.2	Qseven V2.0	Qseven V2.0/2.1	Qseven V2.1
处理器系统	CPU	NXP Arm Cortex-A9 i.MX6 1 GHz	NXP Arm Cortex-A9 i.MX6 Plus 1 GHz	TI Sitara AM5728 Cortex-A15 1.5 GHz	NXP Arm Cortex-A72 i.MX8 1.6 GHz
内存	技术	DDR3 1066 MHz	DDR3 1066 MHz	DDR3L 1066 MHz	LPDDR4 1200 MHz
	容量	On-board DDR3 1 GB	On-board DDR3 1 GB/ 2 GB	On-board DDR3L 2 GB	On-board LPDDR4 4 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	16 GB eMMC NAND Flash for O.S.and 32MB QSPI NOR FLASH for Advantech boot loader
图形	LVDS	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920x1080 for 2ch at 60Hz	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x Dual channel 24-bit LVDS, 1920 x 1200	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920x1080 for 2ch at 60Hz
	MIPI-DSI	-	-	-	-
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	4096 x 2160 at 60Hz
	Parallel RGB	-	-	-	-
	VGA	1920 x 1080 at 60Hz	-	-	-
	图形引擎	2 x IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	2 x IPUs. OpenGL ES 3.0 for 3D, BitBlt for 2D and OpenVG 1.1	2D-Graphics Accelerator (BB2D) Subsystem and Dual-Core PowerVR® SGX544™ 3D GPU	Vivante GC7000XS/VX
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Video Processing Engine (VPE)	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263
以太网	芯片组	NXP i.MX6 integrated RGMII	NXP i.MX6 Plus integrated RGMII	TI Sitara integrated RGMII	NXP i.MX8 integrated RGMII
	速度	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
RTC		Yes	Yes	Yes	Yes
看门狗计时器		256-level timer interval, from 0 ~ 128 sec	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s
I/O	PCIe	1 PCIe 1x	1 PCIe 1x	2 PCIe 1x	2 PCIe 1x
	SATA	1 SATA II	1 SATA II	1 SATA II	1 SATA III
	USB	1 USB 2.0, 1 USB 2.0 OTG	4 USB 2.0, 1 USB 2.0 OTG	1 x USB3.0, 1 x USB 2.0 OTG, 4 x USB2.0 Host	3 USB 3.0, 1 USB 2.0 OTG
	Audio	I2S	I2S	I2S	I2S
	SPDIF	-	-	-	-
	SDIO	1	1	1	1
	Serial Port	4 UART (4 x 2-wire w/ 3.3V)	2 UART (2 x 4-wire w/ 3.3V)	2 UART (2 x 4-wire w/ 3.3V)	2 UART (2 x 4-wire w/ 3.3V)
	SPI	1	1	1	1
	CAN	2 x CAN bus 2.0 A/B	1 x CAN bus 2.0 A/B	1	1
	GPIO	8	8	8	8
	I2C	3	2	2	2
	Camera Input	-	-	-	1 x 4-Lane MIPI CSI-2 1 x 2-Lane MIPI CSI-2
	System Bus	-	-	-	-
	Touch	-	-	-	-
	Keypad	-	-	-	-
	PWM	-	-	2	-
电源	电源电压	5V	5V	5V	5V
	功耗	3.4W (Max)	4W (Max)	10W (Burning)	TBD
环境	工作温度	0~60 °C / -40~85 °C	0~60 °C / -40~85 °C	0~60 °C / -40~85 °C	0~60°C / -40~85°C
	工作湿度	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5% ~ 95% Relative Humidity, non-condensing
物理特性	尺寸 (W x D)	70 x 70 mm	70 x 70 mm	70 x 70 mm	70 x 70 mm
操作系统		Linux Android	Linux Andorid	Linux	Linux
认证		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Note: "-" : means Not Applicable (N/A)

单板计算机

NEW




型号名		RSB-3410	RSB-3430	RSB-4220	RSB-4221
规格		2.5" SBC	2.5" SBC	3.5" SBC	3.5" SBC
处理器系统	CPU	NXP Arm Cortex-A9 i.MX6 Dual-Lite 1 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz	TI Sitara AM3352 Cortex-A8 1 GHz	TI Sitara AM3358 Cortex-A8 1 GHz
内存	技术	DDR3 800 MHz	DDR3 1066 MHz	DDR3 800 MHz	DDR3 800 MHz
	容量	On-board DDR3 1 GB	On-board DDR3 1 GB	On-board DDR3 512 MB	On board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
图形	LVDS	1 x 18/24-bit LVDS, up to 1366 x 768 at 60Hz	2 x 18/24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 18-bit LVDS, 1366 x 768	1 x 18-bit LVDS, 1366 x 768
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	-	-
	VGA	-	-	-	-
	图形引擎	1 IPU. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	Direct3D Mobile, OGL-ES 1.1 and 2.0,OpenVG 1.0, and OpenMax	Direct3D Mobile, OGL-ES 1.1 and 2.0, OpenVG 1.0 and OpenMax
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263,MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	-	-
以太网	芯片组	NXP i.MX6 integrated RGMII	NXP i.MX6 integrated RGMII	TI AM3352 integrated RGMII	TI AM3358 integrated RGMII
	速度	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
看门狗计时器		1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s
I/O	SATA	-	-	-	-
	SATA Power	-	-	-	-
	USB	1 x USB 2.0 Host, 1 x USB OTG	2 x USB 2.0 Type A, 4 x USB 2.0 in UIO 20	1 x USB 2.0 Host/OTG (Jumper selection)	2 x USB 2.0 Host Type A, 2 x USB 2.0 Host pin header
	Audio	-	1 x Line-out, 1 x Line-in via pin header	-	-
	SPDIF	-	-	-	-
	SDIO	1 x SD slot	-	1 x SD slot	1 x SD slot
	Serial Port	1 x 4-wire RS-232	3 x 2 wires RS-232 in UIO 40 1 x 4 wires RSB-232/422/485, DB9	1 x 4-wire RS-232/422/485 and 4 x 2-wire RS-232	4 x 2-wire RS-232 by pin header 1 x 4-wire RS-232/422/485 by DB9
	SPI	-	-	-	-
	CAN	-	1 CAN 2.0B in UIO 40 (share w/ UART)	1	1
	GPIO	-	12 GPIO, 4 GPIO in UIO 20 and 8 GPIO in UIO 40, 3.3V level	4 GPI/ 4 GPO w/ isolation	12 GPIO
	I2C	-	1 in UIO 40	1	1
	System Bus	-	-	-	-
	Touch	-	-	-	-
	Keypad	-	-	-	-
	Button	-	-	1 x Reset button	1 x Reset button
指示灯	LED	1 Power LED 1 Programmable LED	1 Green LED for the system power 1 Green LED (Programmable)	1 Power LED 1 Programmable LED	-
扩展	Mini PCIe	2x mini PCIe slot (1 x half size, 1 x full size w/ USB signal ONLY)	1 x mini PCIe slot (Only USB singal)	1 x mini PCIe slot (Only USB singal)	-
	M.2	-	1 x M.2 slot Key E, Type 2230	-	1 x M.2
	SD 卡插槽	1x SD slot	1 x Micro SD slot	1 x SD slot	1 x SD slot
	SIM	1x SIM slot	1 x SIM slot	-	-
电源	电源电压	12 V	12 V	12~24V	12 V
	电源类型	DC-in	DC-in	2-pole lockable DC-in	2-pole lockable DC-in
	功耗	4.4W (Max)	TBD	4W (Max)	4W (Max)
环境	工作温度	0 ~ 60 °C	0 ~ 60 °C / -40 ~ 85 °C	0 ~ 60 °C/ -40 ~ 85 °C	0 ~ 60 °C
	工作湿度	5 ~ 95% Relative Humidity, non-condensing	5%~95% Relative Humidity, noncondensing	5 ~ 95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing
物理特性	尺寸 (W x D)	100 x 72 x 19 mm	100 x 72 x 20mm	146 x 102 x 16 mm	146 x 102 x 20 mm
操作系统		Linux Android	Linux Android	Linux	Linux Android
认证		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

型号名		RSB-4410	RSB-4411	RSB-4760	RSB-4680	RSB-6410
规格		3.5" SBC	3.5" SBC	3.5" SBC	3.5" SBC	Mini-ITX SBC
处理器系统	CPU	NXP Arm Cortex-A9 i.MX6 1 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz	Qualcomm Snapdragon™ 410E APQ8016 Arm Cortex-A53 1.2 GHz	Rockchip Arm Cortex-A17 RK3288 Quad core 1.6 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz
内存	技术	DDR3 1066 MHz	DDR3 1066 MHz	LPDDR3 1066 MHz	DDR3L 1333 MHz	DDR3 1066 MHz
	容量	On-board DDR3 1 GB	On-board DDR3 1 GB	On-board LPDDR3 1 GB/2 GB	On-board DDR3L 2 GB	On-board DDR3 1 GB/2 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8GB eMMC NAND Flash for O.S. and Advantech boot loader	8 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
图形	LVDS	1 x 18-bit LVDS, up to 1366 x 768 at 60Hz	1 x 18/24 bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	-	1 x 18/24/30-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz	1 x 18/24 bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch at 60Hz
	HDMI	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	3840 x 2160 at 60Hz	1920 x 1080 at 60Hz
	VGA	1920 x 1080 at 60Hz	1920 x 1080 at 60Hz	-	1920 x 1200 at 60Hz	1920 x 1080 at 60Hz
	图形引擎	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	Adreno™ A306 3D graphics core	OpenGL,ES1.1/2.0/3.0, OpenCL1.1,DirectX11	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	Decoder: 30 fps 1080p (MPEG-4/H.264/H.263/DivX/ MPEG2/VC1/Soreson/VP8) Encoder: 30 fps 720p (H.264 Baseline/MPEG-4); 30 fps 1080p (MPEG-4/H.264/VP8/H.263)	Decoder: MPEG-1, MPEG-2, MPEG-4, H.263, H.264, AVS, VC-1, VP8, MVC, HEVC/H.265 decoder, 4k@60FPS Encoder: H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
以太网	芯片组	NXP i.MX6 integrated RGMII	NXP i.MX6 integrated RGMII	Microchip LAN7500	TI DP83867	NXP i.MX6 integrated RGMII
	速度	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
看门狗计时器		256-level timer interval from 0~128 sec	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	0~22s, default 22s	1~6553s, default 60s, power on/off 1s
I/O	SATA	-	1	-	-	1
	SATA Power	-	1	-	-	1
	USB	1 x USB 2.0 Host 2 x USB 2.0 pin header	1 x USB OTG, 2 x USB Type A and 3 x USB pin header	2 x USB 2.0 Host 1 x micro USB OTG	1 x USB OTG, 2 x USB 2.0 Type A 3 x USB 2.0 pin header	6 x USB 2.0 Host
	Audio	1 x Line-out	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in via pin header	1 x Line-out, 1 x Mic-in
	SPDIF	-		-	-	-
	SDIO	1 x SD slot	1 x SD slot	1 x SD slot	1 x Micro SD slot	1 x SD slot
	Serial Port	2 x 2-wire RS-232 by pin header 1 x 4-wire RS-232 by DB9	2 x 2-wire RS-232 pin header 1 x 4-wire RS-232/422/485	1 x 4-wire RS-232/422/485	1 x 4-wire RS-232/485, DB9 1 x 2-wire RS-232/Debug port, pin header selected by jumper 4 x 4-wire RS-232, pin header	3 x 4-wire RS-232 and 1 x 4-wire RS-232/422/485
	SPI	-	1	1	1	-
	CAN	-	2	-	-	1
	GPIO	-	20 GPIO w/o Isolation via pin header	8 x GPIO via D-SUB 9 / 8 x GPIO via pin header (3.3V TTL level)	8 x GPIO via pin header (3.3V TTL level)	18 GPIO
	I2C	-	2	1	1	2
	System Bus	-	-	-	-	-
	Touch	-	-	-	-	-
	Keypad	-	-	-	-	-
	Button	1 x Reset button	-	-	1 x Reset button 1 x Power button by pin header	1 x Reset button by pin header 1 x Power button by pin header
指示灯	LED	1 Power LED 1 RF status LED	1 Power LED	1 Green LED for system power 1 Green LED for RF status	1 Green LED for system power	1 Green LED for system power
扩展	Mini PCIe	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot	1 x mini PCIe slot
	M.2	-	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot	1 x M.2 2230 Key E slot
	SD 卡插槽	1 x SD slot	1 x SD slot	1 x SD slot	1 x Micro SD Slot	1 x SD slot
	SIM	1 x SIM slot	1 x SIM slot	1 x SIM slot	1 x SIM slot	1 x SIM slot
电源	电源电压	12 V	12~24V	9~36V	12V	12 V
	电源类型	DC-in	DC-in	DC-in	DC-in	DC-in
	功耗	5.6W (Max)	5.6W (Max)	6W (Max)	11.6W (Max)	9W (Max)
环境	工作温度	0 ~ 60°C / -40 ~ 85°C	0 ~ 60°C / -40 ~ 85°C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C
	工作湿度	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing
物理特性	尺寸 (W x D)	146 x 102 x 20 mm	146 x 102 x 20 mm	146 x 102 x 20 mm	146 x 102 x 20 mm	170 x 170 x 35 mm
操作系统		Linux Android	Linux Android	Yocto Linux Android Debian Linux	Debian Linux Android	Linux Yocto Android
认证		CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B	CE/FCC Class B

Note: "-" : means Not Applicable (N/A)

嵌入式整机




型号名		EPC-R4760	EPC-R4680	EPC-R6410	EBC-GF06 A1	EBC-GF06 A2
标准系统整机	描述	Arm based Fan-less Barebone System	Arm based Fan-less Barebone System	Arm based Fan-less Barebone System		
处理器系统	兼容主板	RSB-4760	RSB-4680	RSB-6410		
	散热解决方案	Fanless	Fanless	Fanless		
	CPU	Qualcomm Snapdragon™ 410E APQ8016 Arm Cortex-A53 1.2 GHz	Rockchip Arm Cortex-A17 RK3288 Quad core 1.6 GHz	NXP Arm Cortex-A9 i.MX6 1 GHz	NXP ARM Cortex-A9 i.MX6 Quad 1GHz processor	NXP ARM Cortex-A9 i.MX6 Quad/ Dual 1GHz processor
	BIOS	Advantech boot loader	Advantech boot loader	Advantech boot loader		
内存	插槽	On-board	On-board	On-board		
	技术	LPDDR3 1066MHz	DDR3L 1333MHz	DDR3L 1333MHz	DDR3 1066 MHz	DDR3 1066 MHz
	最大容量	1 GB	2 GB	1 GB/2 GB	2GB	2GB
图形	集成芯片组	Adreno™ 306 GPU	Mali-T764 GPU processor with OpenGL ES3.0, OpenCL1.1 and DirectX11	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
存储	板载存储	8GB eMMC NAND Flash for O.S. 4MB SPI NOR Flash for ADV.	8GB eMMC NAND Flash for O.S. and Advantech boot loader	8GB eMMC NAND Flash for O.S. 4MB SPI NOR Flash for ADV.		
	mSATA 插槽	-	-	-		
以太网	接口	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	控制器	Microchip LAN7500	TI DP83867	NXP i.MX6 integrated RMII		NXP i.MX6 integrated RGMII
	连接器	RJ45	RJ45	RJ45		
Audio	Codec	PM8916	Realtek ALC5660	SGTL5000		
内部扩展槽	Mini-PCIe	1 x Full-size	1 x Full-size	1 x Full-size		
	M.2	1 x M.2 Key E slot	1 x M.2 Key E slot	1 x M.2 Key E slot		
	SIM 插槽	1	1	1		
	SD 卡插槽	1 x SD slot	1 x Micro SD slot	1 x SD slot		
前面板	DP++	-	-	-		
	DP/HDMI	1 x HDMI	-	-	1	1
	VGA	-	-	-	1	1
	DVI	-	-	-		
	COM	1 x 4-wire RS-232/422/485	4 x 4-wire RS-232	2 x 4-wire RS-232 1 x debug port	6 x RS232, 2 x RS232/422/485	2 x RS232/422/485
	LAN	1	-	-		
	USB	2 USB 2.0	3 USB2.0	-	8 USB2.0	6 USB2.0
	Audio Jack	-	-	-		
	天线 (可选)	2 x antenna hole	3 x antenna hole	2 x antenna hole		
后面板/内面板	DP++	-	-	-		
	DP/HDMI	-	1x HDMI 2.0 up to 3840 x 2160	1		
	VGA	-	1	1		
	DVI	-	-	-		
	COM	-	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port	1 x 4-wire RS-232/485/422 1 x 4-wire RS-232		4 x RS232
	LAN	-	1	1		
	USB	2 x USB2.0 Host	2 x USB2.0 Host 1 x USB2.0 OTG	6 x USB2.0 Host		
	Audio Jack	-	1 x Line out 1 x Mic in	1 x Line out 1 x Mic in	1 (Line-out, Mic-in)	1 (Line-out, Mic-in)
	GPIO	-	8 x GPIO by DB9 CONN	6	1 for 12bit	
	天线 (可选)	3 x Antenna holes	2 x Antenna holes	2 x Antenna holes		
其他	LED 指示灯	1 Green LED for system power 1 Yellow LED for WLAN	1 Green LED for system power 1 Orange LED for WLAN	1 Green LED for system power		
	开关	-	1 x Reset button 1 x Power button	1 x Reset button 1 x Power button		
	圆形切口	-	-	-		
安装		Wall mount	Wall mount	Wall mount		
电源需求	电源电压	9~36V	12V	12V	12V	12V
	电源输入类型 (Inlet)	DC-in	DC-in	DC-in	DC-in	DC-in
	功耗	TBD	11.6W (heavy loading burning)	9W (heavy loading burning)		
环境	工作温度	0 ~ 40 °C	0 ~ 55 °C	0 ~ 55 °C	0 ~ 50° C	0 ~ 55 °C
	非工作温度	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C	-20 ~ 70° C
	湿度	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing	0% ~ 90% relative humidity, non-condensing	5% ~ 95%, non-condensing
	振动 (5 ~ 500Hz)	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G	IEC60068-2-64 random 2.0Grms IEC60068-2-6 sinusoidal 2.0G		
	冲击	IEC60068-2-27 half-sine 10G/11ms	IEC60068-2-27 half-sine 10G/11ms	IEC60068-2-27 half-sine 10G/11ms		
认证		CE/FCC Class B CB/UL/CCC/BSMI	CE/FCC Class B CCC/BSMI	CE/FCC Class B CCC/BSMI		
物理特性	尺寸 (W x H x D)	188 x 150 x 39 mm	190 x 150 x 43 mm	200 x 230 x 50 mm	297 x 200 x 49 mm	200mm x 230mm x 50 mm w/ bracket 200mm x 190mm x 50mm w/o bracket
	重量	1.2KG	0.95KG	2.26KG		

工控整机

即将上市

Model Name		UBC-220	UBC-330	EPC-R3220
处理器系统	CPU	NXP Arm Cortex-A9 i.MX6 1 GHz	TI Sitara™ AM3352 Cortex-A8 1 GHz	TI Sitara™ AM3352 Cortex®-A8 800MHz
内存	插槽	DDR3 800 MHz	DDR3 800 MHz	DDR3 800 MHz
	技术	On-board DDR3 1 GB	On-board DDR3 512 MB	On-board DDR3 1 GB
	最大容量	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader	8 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for Advantech boot loader
图形	LVDS	1 x 24-bit LVDS, 1366 x 768 at 60Hz	-	-
	HDMI	1920 x 1080 at 60Hz	-	-
	VGA	-	-	-
	图形引擎	1 x IPU. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	-	-
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263,MJPEG BP	-	-
以太网	芯片组	NXP i.MX6 integrated RGMII	TI AM3352 Integrated RGMII	TI AM3352 Integrated RGMII
	速度	1 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps
Cellular	LTE	-	-	-
WLAN	WIFI/BT	-	-	IEEE 802.11ac/a/b/g/n 2*2 WLAN+BT 5.0 (option)
看门狗计时器		1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s	1~6553s, default 60s, power on/off 1s
I/O	USB	1 USB 2.0 Host	1 USB 2.0 Host	1 USB 2.0 OTG
	Audio	-	-	-
	SDIO	1 x SD slot	1 x SD slot	1 x micro SD slot
	Serial Port	1 x 4-wire RS-232	1 x 4-wire RS-232/422/485 4 x 2-wire RS-232	2 x 4-wire RS-232/485
	GPIO	-	4 GPI/ 4 GPO w/ isolation	6
	CANBus	-	1	-
	I2C	-	1	1
	按钮	-	1 x Reset button	1 x Reset button
指示灯	LED	1 Green LED for system power 1 Green LED for user to define	1 Green LED for system power 1 Green LED for RF status	1 LED for system power 3 LEDs for user to define
扩展槽	Mini PCIe	2x mini PCIe slot	1x mini PCIe slot (Only USB Signal)	1x mini PCIe slot (Only USB Signal)
	SD 卡插槽	1x SD slot	1 x SD slot	1 x Micro SD slot
	SIM	1x SIM slot	-	1 x Nano SIM slot
	天线孔	1 x Antenna hole	1 x Antenna hole	4 x Antenna holes
	Others	1x Internal antenna support	-	-
电源	电源电压	12V	12 V , 19 V , 24 V	12~24V
	电源类型	DC-in	DC-in	2-pole lockable DC-in
	功耗	4.4W (Max)	3.3W (Max)	4.7W (Burning)
环境	工作温度	0 ~ 60 °C	0 ~ 60 °C	-20 ~ 70 °C
	工作湿度	5%~95% Relative Humidity, non-condensing	5%~95% Relative Humidity, non-condensing	5 ~ 95% Relative Humidity, non-condensing
物理特性	尺寸 (WxDxH)	120 x 89 x 30 mm	191 x 129 x 30 mm with metal plate 166 x 117 x 30 mm without metal plate	139 x 85 x 30 mm
	安装	Wall mount, DIN rail, VESA 75/100 by option	Wall mount, VESA 75/100, Flexible mount with two screw holes on the metal plate	Wall mount/DIN rail mount
	重量	215g	265g	TBD
操作系统		Linux Android	Linux	Yocto Linux
认证		CCC/CE/FCC/VCCI	CCC/CE/FCC Class B	CE/FCC/CCC/BSMI/SRRC

Note: “-” : means Not Applicable (N/A)

入门套件

ROM-DK7720
Qseven NXP i.MX 8

ROM-DK5720
SMARC NXP i.MX 8M

ROM-DK5620
SMARC NXP i.MX 8X

ROM-DK7421
Qseven NXP i.MX 6

ROM-DK5420
SMARC NXP i.MX 6

ROM-DK3420
RTX NXP i.MX 6

ROM-DK3310
RTX TI Sitara AM3352

RSB-DK4220
3.5" SBC TI Sitara AM3352

RSB-DK4221
3.5" SBC TI Sitara AM3358

记事

ROM-3310

TI Sitara™ ARM® AM3352 Cortex®-A8 1GHz RTX2.0 Module

特点

- TI Sitara™ ARM® AM3352 Cortex®-A8 1Ghz high performance processor
- On board DDR3 512MB memory / 4GB EMMC
- Supports wide range power input 5V~24V
- Supports 1 GbE, 1 USB 2.0, 1 USB 2.0 OTG, 2 CANbus, 10 GPIO, 4 UART, 1 I²C, 1 I²S, 1 SPI, 1 SDIO
- Operating temperature 0 ~ 60 °C / -40 ~ 85 °C
- Low power consumption, fanless design
- Supports Linux BSP

Introduction

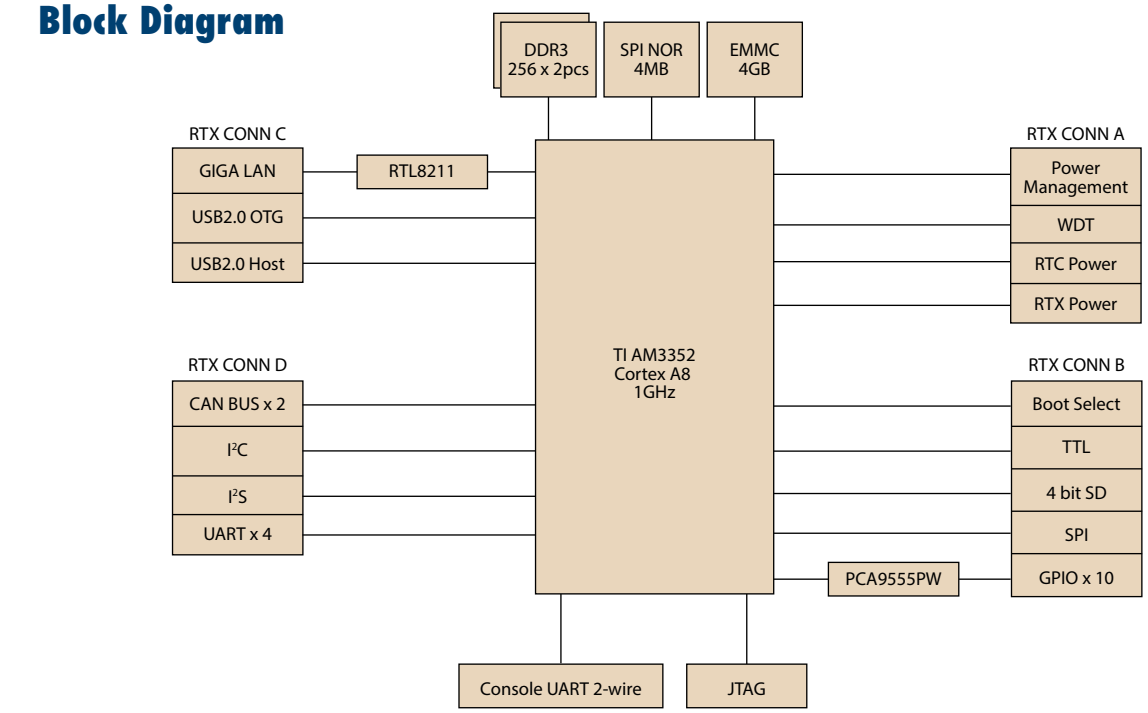
ROM-3310 RTX2.0 module integrates an ARM Cortex A8 single core 1 GHz TI AM3352 series ultra low power SoC and I/O solution with Linux. TI AM3352 supports multiple serial ports, 5V~24V wide range power inputs, and wide temperature -40 ~ 85 °C operation for data collection in industrial applications. Based on a thickness of 2 mm board, it uses an anti-oxidization golden finger design.

ROM-3310 RTX2.0 module offers an Advantech ROM-DB3900 evaluation carrier board for easy integration and hardware design reference, and also provides a Linux BSP utility and reference codes for application development and device integration.

Specifications

Form Factor		RTX 2.0
Processor System	CPU	TI Sitara Cortex A8 AM3352 1Ghz
Memory	Technology	DDR3 on board 800MHz
	Capacity	512MB
	Flash	4GB EMMC NAND Flash for O.S & 4MB SPI NOR Flash for ADV loader
Graphics	Parallel RGB	1 x 24-bit TTL, 1366 x 768
Ethernet	Chipset	TI AM3352 Integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		MSP430G2202 (time out : 0.1~6553.5s, power on/off 4s)
I/O	USB	1 x USB 2.0 host,1 x USB 2.0 OTG
	I²S	1
	SDIO	1
	Serial Port	4 x UART (1 x 4 wire, 3 x 2 wire w/ 3.3V)
	SPI	1
	CAN	2 x CAN 2.0
	GPIO	10
	I²C	1
Power	Power Supply Voltage	5 ~ 24 V
	Power Consumption	2.11W (Max)
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	68 x 68 mm
Operating System		Linux Kernel v3.2.0
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash	Parallel RGB	LAN	GPIO	USB Host	USB OTG	I²C	I²S	SD	SPI	UART	CAN	Operating Temperature
ROM-3310WS-MCA1E	TI Sitara AM 3352 Cotex A8 1GHz	512MB	4GB	1	1	10	1	1	1	1	1	1	4	2	-40 ~ 85 °C
ROM-3310CS-MCA1E	TI Sitara AM 3352 Cotex A8 1GHz	512MB	4GB	1	1	10	1	1	1	1	1	1	4	2	0 ~ 60 °C

Development Board

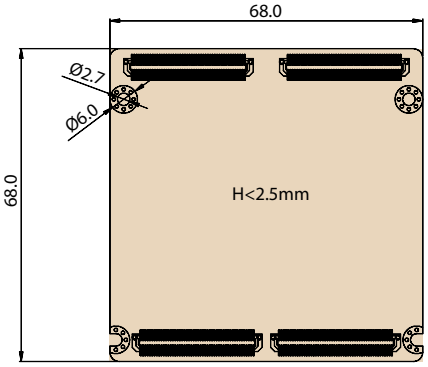
Part No.	Description
ROM-DB3900-SWA1E	Development board for RTX2.0 module
ROM-DK3310-F0A1E	ROM-3310 EVK Kit (RTX v2.0)

Optional Accessories

Part Number	Description
9696ED2000E	Debug adapter board
1700022373-01	Debug port cable for ROM-3420/5420/3310
1960070578T001	Heatsink_Black for ROM-3310
1930002234	Screws M2.5x12.5L, for Heatsink

Dimensions

Unit: mm



ROM-3420

Freescale ARM Cortex-A9 i.MX6 RTX2.0 Module

Features

- Freescale ARM Cortex-A9 i.MX6 Dual 1 GHz high performance processor
- Onboard DDR3 1 GB memory / 4 GB Flash
- Supports wide range power input 5V~24V
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators
- Supports full HD 1080p video decode and HD 1080p video encode hardware engine
- Supports 1 PCIe, 1 GbE, 1 USB 2.0, 1 USB OTG2.0, 1 SATAII, 4 I²C, 1 I²S, 1 Camera in, 2 CANbus, 10 GPIO, System bus
- Optional thermal solution

Introduction

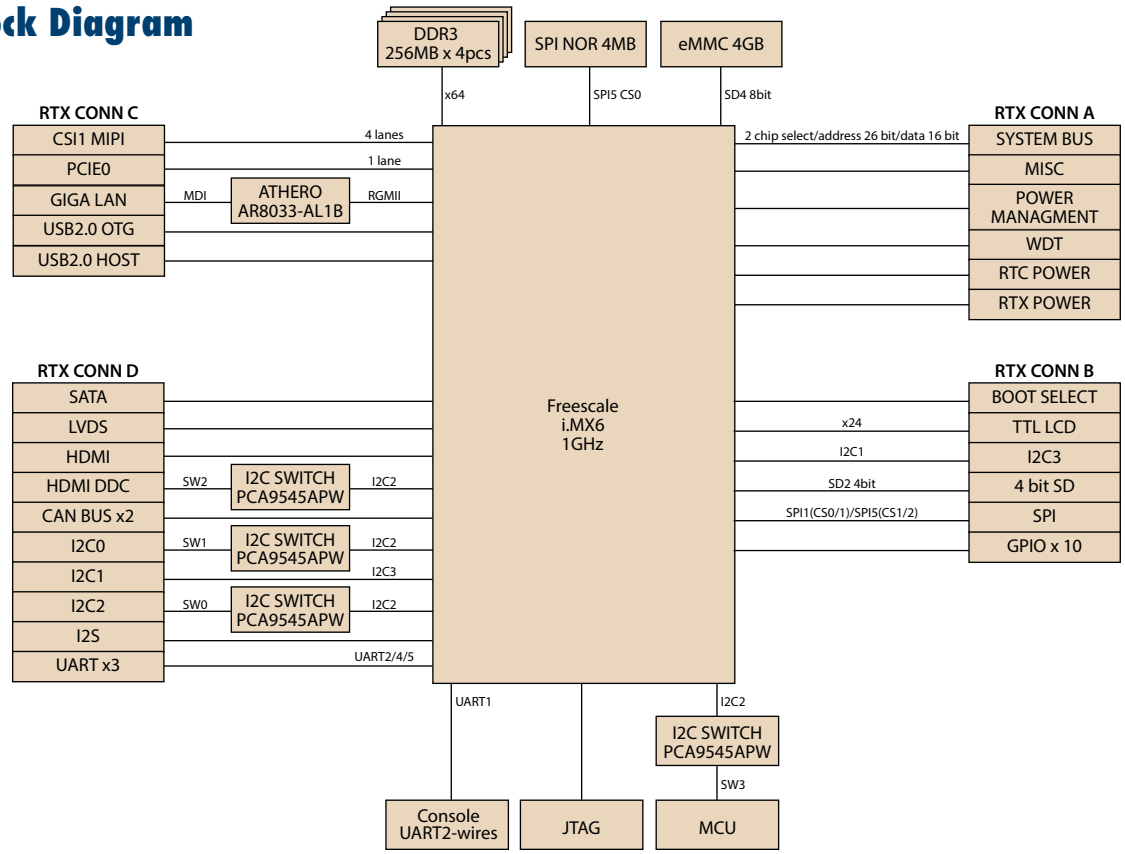
ROM-3420 RTX2.0 module integrates an ARM Cortex A9 Dual 1 GHz Freescale i.MX6 series ultra low power SoC and I/O solution chips to be Linux solution-ready! Freescale i.MX6 supports 2D, 3D graphics acceleration, full HD 1080P video decoding encoding hardware engine. ROM-3420 supports 5V~24V wide range power input and wide temperature design for industrial applications.

ROM-3420 RTX2.0 module has an Advantech ROM-DB3900 evaluation carrier board for easy integration and hardware design reference, and also provides Linux BSP utility and reference codes for application development and device integration.

Specifications

Form Factor		RTX2.0
Processor System	CPU	Freescale ARM Cortex-A9 i.MX6 Dual/Quad 1 GHz
Memory	Technology	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 Single 18/24-bit LVDS, 1366 x768
	HDMI	1 HDMI, 1920 x1080
	Parallel RGB	1 24-bit TTL, 2048 x 1536
	VGA	-
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	Freescale i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		S/W WDT, 256-level timer interval from 0 ~ 128 sec
I/O	PCIe	1 PCIe, 1 x Lane
	SATA	1 SATA II
	USB	1 USB 2.0, 1 USB 2.0 OTG
	Audio	I²S
	SPDIF	-
	SDIO	1
	Serial Port	3 UART (3 x 4 wire w / 3.3V)
	SPI	2
	CAN	2 CAN bus 2.0B
	GPIO	10
	I²C	4
	Camera Input	1 MIPI V1.0 (x 4 Lane)
	System Bus	Address: 26 bits, Data: 16 bits
	Touch	-
	Keypad	-
Power	Power Supply Voltage	5 ~ 24 V
	Power Consumption	1.7W (Kernel idle mode) 3.3W (CPU max-loading) 6.1w (Max mode, OpenGL open)
Environment	Operational Temperature	0 ~ 60° C/ -40 ~ 85° C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	68 x 68 mm
Operating System		Ltib Linux Kernel v3.0.35/Android v4.3
Certifications		CE/FCC Class B

Block Diagram

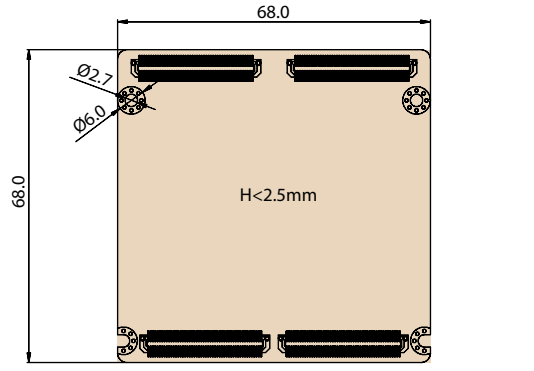


Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I²C	SPI	Size	Power input	Operating Temperature
ROM-3420CD-MDA1E	i.MX6 Dual 1GHz	1 GB	4 GB	3	1	1	1	1 x 24bit LVDS 1 x 24bit TTL 1 x HDMI	1	1	1	1	2	4	2	68 x 68 x 7 mm	5 V ~ 24 V	0 ~ 60° C
ROM-3420WD-MDA1E	i.MX6 Dual 1GHz	1 GB	4 GB	3	1	1	1	1 x 24bit LVDS 1 x 24bit TTL 1 x HDMI	1	1	1	1	2	4	2	68 x 68 x 7 mm	5 V ~ 24 V	-40 ~ 85° C

Dimensions

Unit: mm



Development Board

Part No.	Description
ROM-DB3900-SWA1E	Development board for RTX2.0 module
ROM-DK3420-F0A1E	RTX v2.0 EVK kit

Optional Accessories

Part No.	Description
1700022373-01	Debug port cable for ROM-3420/5420
9696ED2000E	Debug Adapter Board
1960065189N001	Semi-Heatsink for ROM-3420
1930004835	Screw for Heatsink

ROM-5420

NXP ARM® Cortex®-A9 i.MX6 SMARC v1.1 Module

- NXP ARM® Cortex® -A9 i.MX6 high performance processor
- Onbard DDR3 memory and eMMC 4GB
- Parallel RGB, HDMI, single channel 18/24-bit LVDS, 1366 x 768
- 2 x CAN, 4 x UART, 5 x I²C, 12 x GPIO, 1 x PCIe, 1 x camera input and 1 x Gigabit LAN
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators
- Supports full HD hardware encode/decode engine
- Low power consumption, fanless desgin
- Supports Linux and Android BSP

Introduction

ROM-5420 SAMRC v1.1 Module integrates ARM Cortex-A9 NXP i.MX6 series ultra low power SoC and I/O solution chips to be OS support ready. NXP i.MX6 supports 2D, 3D graphics acceleration, full HD 1080P video decoding and an HD 1080p video encoding hardware engine.

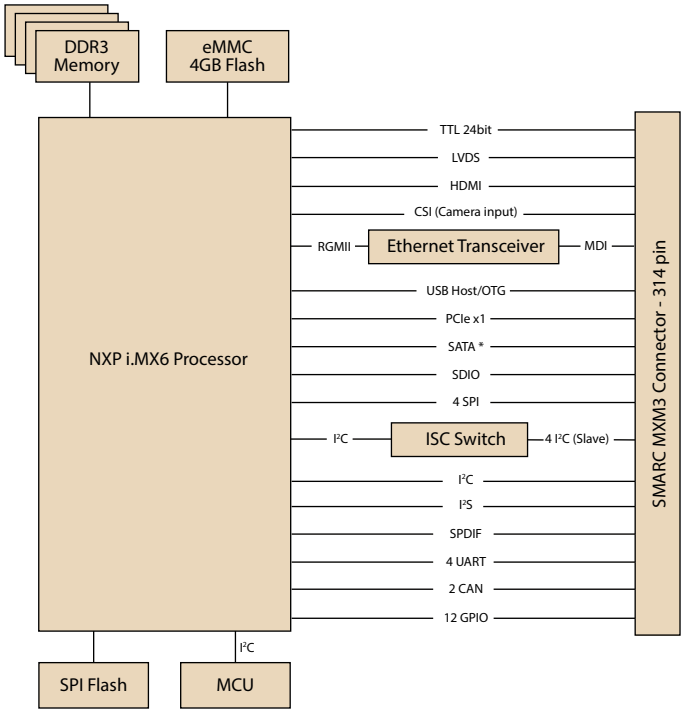
ROM-5420 has Advantech ROM-DB5900 Evaluation Carrier Board for easy integration and design reference; we also offer referenced schematics and layout checklists for carrier board development. Additionally, optimized Linux BSP, test utilities, HW design utilities and reference codes are ready for application development and device integration.

Specifications

Form Factor		SMARC v1.1
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 800MHz/1GHz
Memory	Technology	DDR3 1066 MHz up to 2GB
	Capacity	On-board DDR3
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	1 Single 24-bit LVDS, 1366 x 768 at 60Hz
	HDMI	1920 x 1080 at 60Hz
	Parallel RGB	1 24-bit TTL, 1920 x 1200 at 60Hz
	VGA	-
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		256-level timer interval, from 0 ~ 128 sec
I/O	PCIe	1 PCIe x 1
	SATA	1 SATA II *
	USB	1 USB 2.0, 1 USB 2.0 OTG
	Audio	I²S
	SPDIF	1
	SDIO	1
	Serial Port	4 UART (2 x 2 wire, 2 x 4 wire w/ 3.3V)
	SPI	4
	CAN	2 x CAN bus 2.0B
	GPIO	12
	I²C	5
	Camera Input	1 MIPI v1.0, 4x Lane
	System Bus	-
	Touch	-
	Keypad	-
Power	Power Supply Voltage	+3 ~ 5.25 V
	Power Consumption	3.1W (Max)
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operation System		Linux & Android
Certifications		CE/FCC Class B

* Dual/Quad CORE SKU ONLY

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I²C	SPI	Size	Power input	Operating Temperature
ROM-5420CD-MDB1E	i.mx6 Dual 1GHz	1GB	4 GB	4	1	1	1	1x 24bit LVDS 1x 24bit TTL 1x HDMI	1	1	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5420CD-MEB1E	i.mx6 Dual 1GHz	2GB	4 GB	4	1	1	1	1x 24bit LVDS 1x 24bit TTL 1x HDMI	1	1	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5420CQ-MEB1E	i.mx6 Quad 1GHz	2GB	4 GB	4	1	1	1	1x 24bit LVDS 1x 24bit TTL 1x HDMI	1	1	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5420WQ-MEB1E	i.mx6 Quad 800MHz	2GB	4 GB	4	1	1	1	1x 24bit LVDS 1x 24bit TTL 1x HDMI	1	1	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C

Development Board

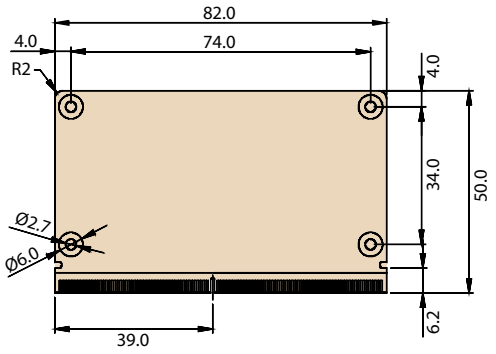
Part No.	Description
ROM-DB5900-SWA2E	Developmemt Board for SMARC v1.1
ROM-DK5420-F0A1E	Evaluation kit for ROM-5420 Module

Optional Accessories

Part No.	Description
1700022373-01	Debug port cable for ROM-3420/5420
ROM-ED20-00A1E	Debug adapter board
1960075867N001	Heat spreader
1930005215	Screws for heat spreader
1960063089N001	Semi heat sink
1930004835	Screws for heat spreader and semi heat sink

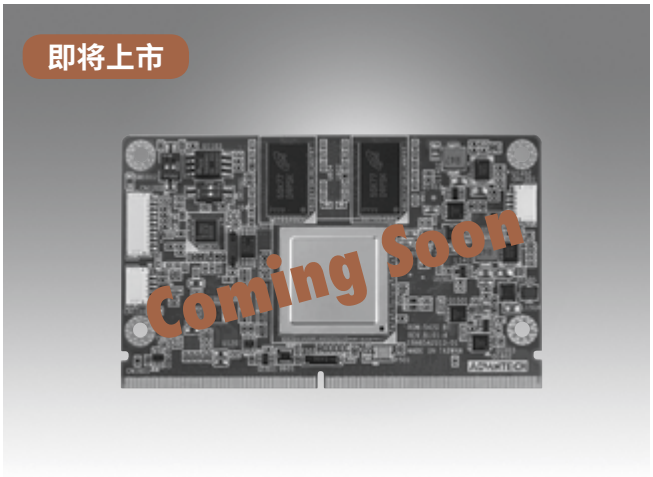
Dimensions

Unit: mm



ROM-5620

NXP Arm® Cortex®-A35 i.MX 8X SMARC 2.0 Module



特点

- NXP i.MX 8X processor with 2-4 x Arm Cortex-A35 cores
- 1 x Arm Cortex-M4F core and 1x Tensilica® HiFi 4 DSP
- Onboard 2GB LPDDR4 memory and eMMC 16GB
- 2 x single channel LVDS (1 x dual channel) or 2 x 4-LANE MIPI DSI
- 1 x USB 3.0, 2 x USB 2.0, 2 x CAN, 3 x UART, 4 x I2C, 12 x GPIO, 1 x PCIe 3.0, 1 x 4-lane MIPI CSI camera input and 2 x Gigabit LAN
- Supports OpenGL 3.0/2.1 ; OpenGL ES 3.1/3.0/2.0/1.1 and OpenCL 2.0 hardware accelerators
- Supports 4K hardware decode engine
- Low power consumption desgin
- Supports Linux and Android BSP

Introduction

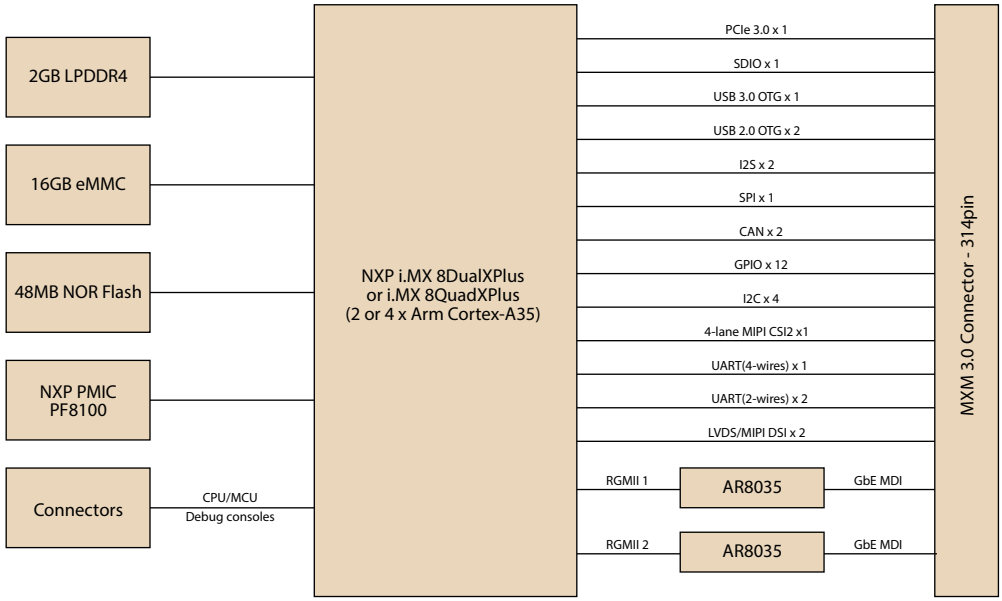
Advantech ROM-5620 SMARC 2.0 Computer-on-Module is powered by NXP i.MX 8X SoC which includes two to four Arm Cortex-A35 cores for mid-range automotive and industrial market segments, one Cortex-M4F core for real-time processing, and one Tensilica Hi-Fi 4 DSP for efficient audio and voice codec execution. It also escalates its graphic performance by Vivante GC7000 Lite, 4K H.265 capable decoder, and dual 1080P60 display controller.

ROM-5620 is paired with Advantech ROM-DB5901 Evaluation Carrier Board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklists documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design utilities and reference drivers.

Specifications

Form Factor		SMARC 2.0
Processor System	CPU	NXP i.MX 8DualXPlus (2 x Arm Cortex-A35) or 8QuadXPlus (4 x Arm Cortex-A35) 1.2GHz
	MCU	1 x Arm Cortex-M4F core
	DSP	1 x Tensilica® HiFi 4 DSP
Memory	Technology	LPDDR4-1200
	Capacity	Onboard 2GB LPDDR4
	Flash	16 GB eMMC NAND Flash for O.S. and 48 MB QSPI NOR Flash for Advantech boot loader
Graphics	LVDS/MIPI DSI	2 x single channel LVDS 1080p (1 x dual channel) or 2 x 4-LANE MIPI DSI
	HDMI	-
	Parallel RGB	-
	VGA	-
	Graphics Engine	Vivante GC7000 Lite
	H/W Video Codec	Supports H.265(4K30) /H.264(1080P60) decode and H.264 (1080p30) encode
Ethernet	Chipset	2 x NXP i.MX8X GbE controller
	Speed	2 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		PMIC integrated WDT
Security		TPM 2.0
I/O	PCIe	1 x PCIe 3.0
	SATA	-
	USB	1 x USB 3.0, 2 x USB 2.0 OTG
	Audio	2 x I²S
	SPDIF	-
	SDIO	1
	Serial Port	1 x 4-wire UART (H/W flow control) and 2 x 2-wire UART
	SPI	2
	CAN	2 x CAN FD
	GPIO	12
	I²C	4 with interrupt
	Camera Input	1 x 4-lane MIPI CSI-2
	System Bus	-
	Touch	-
	Keypad	-
Power	Power Supply Voltage	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium Ion cells
	Power Consumption	TBD
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operation System		Linux & Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB 3.0	USB 2.0	Display	PCIe 3.0	SD	CANbus	I²C	SPI	Size	Power input	Operating Temperature
ROM-5620CD-OEA1E	i.MX 8DualXPlus	2 GB	16 GB	4	2	1	2	2 x single channel LVDS or 2 x 4-lane MIPI DSI	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5620WD-OEA1E	i.MX 8DualXPlus	2 GB	16 GB	4	2	1	2	2 x single channel LVDS or 2 x 4-lane MIPI DSI	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C
ROM-5620CQ-OEA1E	i.MX 8QuadXPlus	2 GB	16 GB	4	2	1	2	2 x single channel LVDS or 2 x 4-lane MIPI DSI	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5620WQ-OEA1E	i.MX 8QuadXPlus	2 GB	16 GB	4	2	1	2	2 x single channel LVDS or 2 x 4-lane MIPI DSI	1	1	2	5	4	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C

Development Board

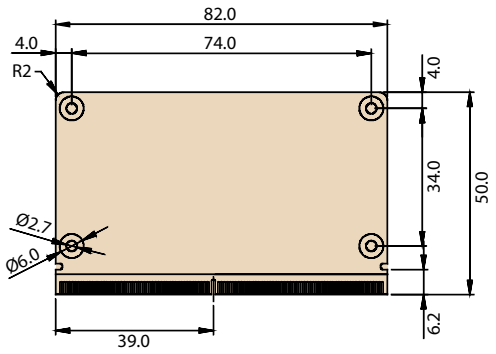
Part No.	Description
ROM-DB5901-SWA1E	Developmemt Board for SMARC 2.0 Module

Optional Accessories

Part No.	Description
TBD	Debug port cable for ROM-5620
TBD	Debug adapter board
TBD	Heat spreader
TBD	Screws for heat spreader
TBD	Semi heat sink
TBD	Screws for heat spreader and semi heat sink

Dimensions

Unit: mm



ROM-5720

NXP Arm® Cortex®-A53 i.MX 8M SMARC 2.0 Module

特点

- NXP i.MX 8M processor with dual or quad ARM Cortex A53 cores
- 1 x Arm Cortex-M4 core
- Onboard 2GB LPDDR4 memory and eMMC 16GB
- 1 x HDMI2.0 up to 4096 x 2160, 1 x 4-Lane MIPI DSI
- 2 x USB3.0, 4 x USB2.0, 4 x UART, 4 x I2C, 12 x GPIO, 1 x PCIe2.0, 1 x 4-lane MIPI CSI camera input, 1 x 2-lane MIPI CSI camera input and 2 x Gigabit LAN
- Support OpenGL ES 3.1/3.0/2.0/1.1 and Open CL 1.2, and Vulkan hardware accelerators
- Supports 4K hardware decode engine
- Low power consumption desgin
- Supports Linux and Android BSP

Introduction

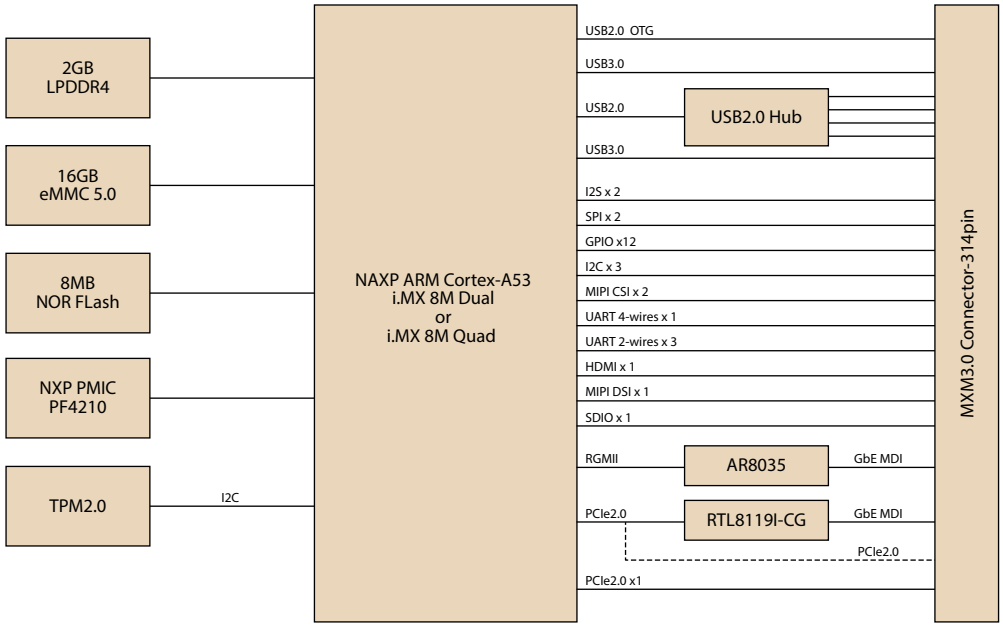
Advantech ROM-5720 SMARC 2.0 Computer-on-Module is powered by NXP i.MX8M SOC which includes dual and quad-core Arm Cortex-A53 processors in combination with one Cortex-M4 real time processor and Vivante GC7000 Lite 3D Graphics engine. It provides USB3.0, two Gigabit Ethernet, two MIPI-CSI, PCI Express, HDMI2.0 up to 4096 x 2160 at 60 Hz and MIPI-DSI for embedded applications. It's the ideal solution for Transportation, Infotainment, Vending, Medical and so on.

ROM-5720 is paired with Advantech ROM-AB5300 3.5" Application Carrier Board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklists documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design utilities and reference drivers.

Specifications

Form Factor		SMARC 2.0
Processor System	CPU	NXP i.MX 8M Dual or Quad ARM Cortex A53 cores, up to 1.5GHz
	MCU	1 x Arm Cortex-M4 core
Memory	Technology	LPDDR4-1866
	Capacity	Onboard 2GB LPDDR4
	Flash	16 GB eMMC NAND Flash for O.S. and 8 MB QSPI NOR Flash for Advantech boot loader
Graphics	LVDS/MIPI DSI	1 x 4-lane MIPI DSI, up to 1920 x 1080 @ 60Hz
	HDMI	1 x HDMI2.0, up to 4096 x 2160 at 60 Hz
	Parallel RGB	-
	VGA	-
	Graphics Engine	Vivante GC7000 Lite. Support OpenGL ES 1.1, 2.0, 3.0, 3.1, Open CL 1.2, and Vulkan
	H/W Video Codec	Decoder: HEVC/H.265(4Kp60), VP9(4Kp60), H.264(4Kp30), MPEG-2, MPEG-4p2, VC-1, VP8, RV9, AVS, MJPEG, H.263
Ethernet	Chipset	1 x NXP i.MX8M GbE controller; 1 x RTL8119I-CG Giga LAN controller or 1 x PCIe x 1-lane(option)
	Speed	2 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		PMIC integrated WDT
Security		TPM 2.0
I/O	PCIe	1 x PCIe 2.0
	SATA	-
	USB	2 USB3.0, 4 USB2.0,1 USB2.0 OTG
	Audio	2 x I²S
	SPDIF	-
	SDIO	1
	Serial Port	1 x 4-wire UART (H/W flow control) and 3 x 2-wire UART
	SPI	2
	CAN	-
	GPIO	12
	I²C	4 with interrupt
	Camera Input	1 x 4-lane MIPI CSI, 1 x 2-lane MIPI CSI
	System Bus	-
	Touch	-
	Keypad	-
Power	Power Supply Voltage	Fixed 5V DC source and allow 3.3 V ~ 5.25 V operates directly from single level Lithium Ion cells
	Power Consumption	TBD
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operation System		Linux & Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB3.0/2.0	Display	PCIe 2.0	SD	CANbus	I²C	SPI	Size	Power input	Operating Temperature
ROM-5720CD-OEA1E	i.MX 8M Dual	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	2	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5720WD-OEA1E	i.MX 8M Dual	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	2	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C
ROM-5720CQ-OEA1E	i.MX 8M Quad	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	2	82 x 50 x 5 mm	3 ~ 5.25V	0 ~ 60 °C
ROM-5720WQ-OEA1E	i.MX 8M Quad	2 GB	16 GB	4	2	2 USB3.0, 4 USB2.0 1 USB2.0 OTG	1 x HDMI 2.0 1 x 4-lane MIPI DSI	1	1	-	4	2	82 x 50 x 5 mm	3 ~ 5.25V	-40 ~ 85 °C

Development Board

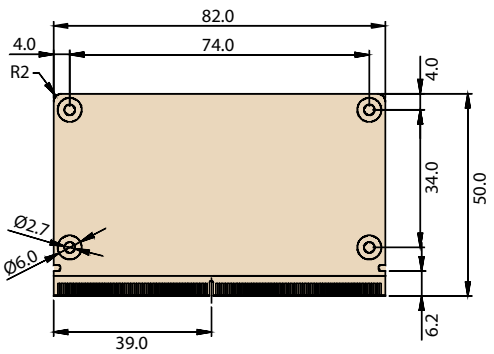
Part No.	Description
ROM-AB5300-SCA1E	3.5" Application Board for SMARC 2.0 Module
ROM-DB5901-SWA1E	Development board for SMARC v2.0 RISC Module series

Optional Accessories

Part No.	Description
TBD	Debug port cable for ROM-5720
TBD	Debug adapter board
TBD	Heat spreader
TBD	Screws for heat spreader
TBD	Semi heat sink
TBD	Screws for heat spreader and semi heat sink

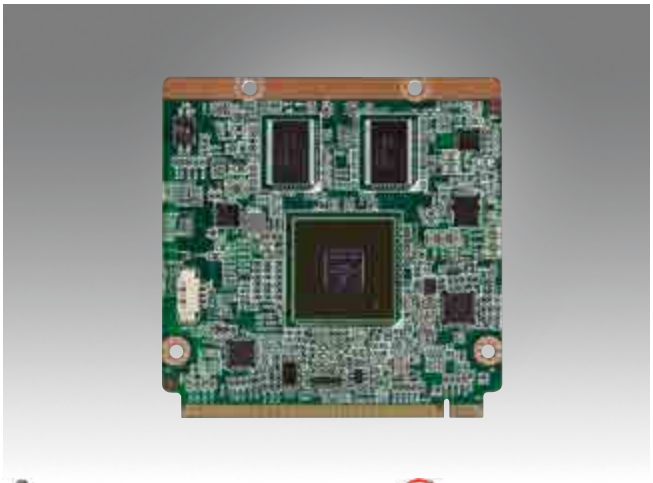
Dimensions

Unit: mm



ROM-7420

NXP ARM® Cortex®-A9 i.MX6 Qseven Module



特点

- NXP ARM® Cortex®-A9 i.MX6 Dual / Quad 1 GHz high performance processor
- Onboard DDR3 memory 1 GB and eMMC Flash 4 GB
- HDMI, VGA, LVDS, up to 4 displays
- Compact in size 70 x 70mm
- Rich I/O with 2 CAN, 4 UART, Giga LAN, PCIe and SATA
- Low power consumption, fanless design
- Supports Linux and Android BSP

Introduction

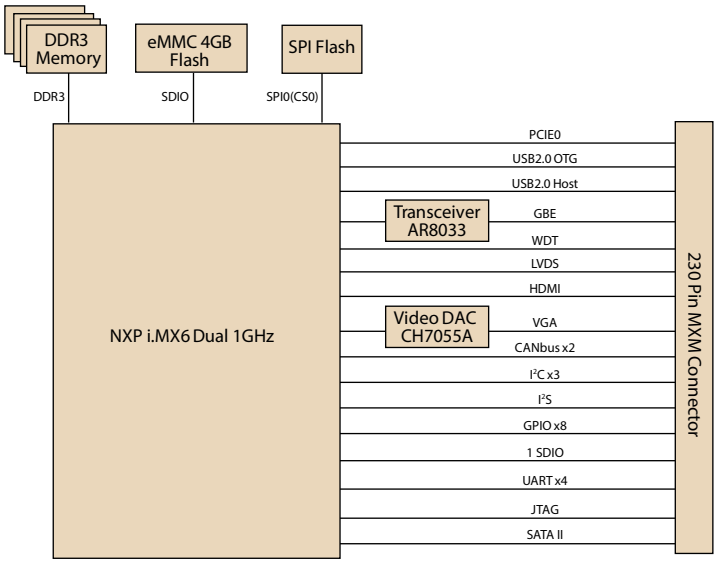
ROM-7420 Qseven Module integrates an ARM Cortex-A9 NXP i.MX6 series ultra low power SoC and I/O solution chips with Linux. NXP i.MX6 supports 2D, 3D graphics acceleration, full HD 1080P video decoding and an HD 1080p video encoding hardware engine.

ROM-7420 offers an Advantech ROM-DB7500 Evaluation Carrier Board for easy integration and design reference; we also offer schematics and layout checklists for carrier board development. Additionally, Linux BSP, test utilities, HW design utilities, and reference codes are ready for application development and device integration.

Specifications

Form Factor		Qseven 1.2
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 1 GHz
Memory	Technology	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	2 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch
	HDMI	1920 x 1080 at 60Hz
	Parallel RGB	-
	VGA	1920 x 1080 at 60Hz
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		256-level timer interval, from 0 ~ 128 sec
I/O	PCIe	1 PCIe x 1
	SATA	1 SATA II
	USB	1 USB 2.0, 1 USB 2.0 OTG
	Audio	I²S
	SPDIF	-
	SDIO	1
	Serial Port	4 UART (4 x 2 wire, w/ 3.3V)
	SPI	1
	CAN	2 x CAN bus 2.0B
	GPIO	8
	I²C	3
	Camera Input	-
	System Bus	-
	Touch	-
	Keypad	-
Power	Power Supply Voltage	+5 V
	Power Consumption	3.16W (Max)
Environment	Operating Temperature	0 ~ 60 °C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	70 x 70 mm
Operation System		Linux & Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I²C	SPI	Size	Power Input	Operating Temperature
ROM-7420CQ-MEA1E	i.MX6 Quad 1 GHz	2GB	4GB	4	1	1	1	2 x 24bit LVDS 1 x VGA	1	1	1	1	2	3	1	70 x 70 x 5mm	5V	0 ~60 °C
ROM-7420WQ-MEA1E	i.MX6 Quad 1 GHz	2GB	4GB	4	1	1	1	2 x 24bit LVDS 1 x VGA	1	1	1	1	2	3	1	70 x 70 x 5mm	5V	-40 ~85 °C
ROM-7420CD-MDA1E	i.MX6 Dual 1 GHz	1 GB	4 GB	4	1	1	1	2 x 24-bit LVDS 1 x VGA	1	1	1	1	2	3	1	70 x 70 x 5mm	5V	0 ~ 60 °C
ROM-7420WD-MDA1E	i.MX6 Dual 1 GHz	1 GB	4 GB	4	1	1	1	2 x 24-bit LVDS 1 x VGA	1	1	1	1	2	3	1	70 x 70 x 5mm	5V	-40 ~ 85 °C
ROM-7420CS-MCA1E	i.MX6 Solo 1 GHz	512 MB	4 GB	4	1	1	1	LVDS or VGA	-	1	1	1	2	3	1	70 x 70 x 5mm	5V	0 ~ 60 °C

Development Board

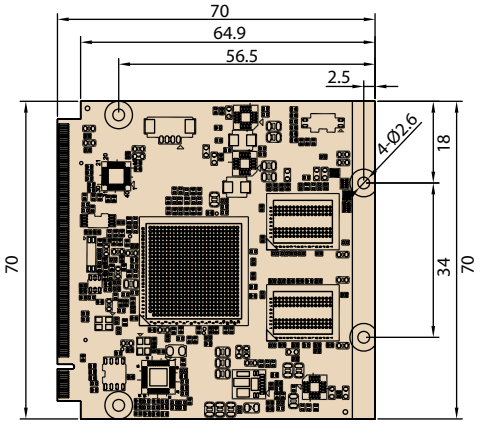
Part No.	Description
ROM-DB7500-SCA1E	Development Board for Qseven v1.2 RISC Module

Optional Accessories

Part No.	Description
1700020442-01	Debug Port Cable for ROM-7420
9696ED2000E	Debug Port Adapter for ROM-7420
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Code 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85 °C)
EWM-W142F01E	802.11 b/g/n,AR9287,2T2R,Full size Mini PCIe
1750007050-01	WiFi RP-SMA short SMA Jack(9.5mm) to U.FL_100mm (WiFi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (WiFi Antenna)
EWM-C106FT01E	Cellular, HSUPA/WCDMA/GPRS,Full Mini PCIe
1750007156-01	Cellular/GPS SMA Short JACK(9.5MM) L=100mm (3G Cable)
1750005865	Antenna L=10.9cm 50Ohm AN8921F-5701SM (3G Antenna)
1960061913N001	Heat spreader O-NXP-S-5W 70x63x8-SC ROM-7420

Dimensions

Unit: mm



ROM-7421

NXP ARM Cortex-A9 i.MX6 Qseven 2.0 Module

- NXP ARM Cortex-A9 i.MX6 Solo/Dual Plus/Quad Plus 1 GHz high performance processor
- Onboard DDR3 memory 1 GB/2 GB
- Onboard eMMC NAND Flash 4 GB
- Supports OpenGL ES 2.0 and OpenVG 1.1 hardware accelerators, full HD 1080p video codec
- HDMI, Dual Channel 24bit LVDS
- 1 CAN, 2 UART, 2 I²C, 8 GPIO, 1 I²S
- 4 USB, 1 SDIO, 1 SATA II
- 1 10/100/1000 Mbps Ethernet; 1 PCIe x1 Gen2
- Optional thermal solution

Introduction

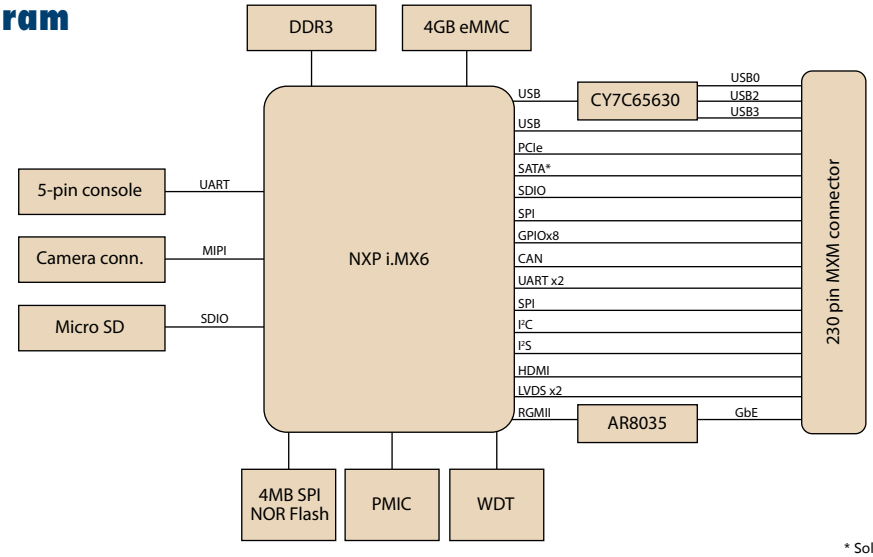
ROM-7421 Qseven Module integrates ARM Cortex-A9 NXP i.MX6 series ultra low power SoC and I/O solution chips to be Linux support ready. NXP i.MX6 supports 2D, 3D graphics acceleration, full HD 1080P video decoding and an HD 1080p video encoding hardware engine.

ROM-7421 has Advantech ROM-DB7501 Evaluation Carrier Board for easy integration and design reference; we also offer referenced schematics and layout checklists for carrier board development. Additionally, Linux BSP, test utilities, HW design utilities and reference codes are ready for application development and device integration.

Specifications

Form Factor		Qseven 2.0
Processor System	CPU	NXP ARM Cortex-A9 i.MX6 Solo/Dual Plus/Quad Plus 1 GHz
Memory	Technology	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB/2 GB
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader
Graphics	LVDS	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch
	HDMI	1920 x 1080
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		HW Watchdog Timer
I/O (Edge finger)	PCIe	1 PCIe, 1 x Lane
	SATA	1 SATA II
	USB	4 USB 2.0 (1 USB OTG)
	Audio	I²S
	SPDIF	-
	SDIO	1
	Serial Port	2 UART (4 wire)
	SPI	1
	CAN	1
	GPIO	8
	I²C	2
	System Bus	-
	Touch	-
	Keypad	-
I/O (On board)	UART	1 (for console)
	SD	1 microSD
	Camera	1 MIPI Video Capture Port
Power	Power Supply Voltage	5 V
	Power Consumption	4.4 Watts (Max)
Environment	Operational Temperature	0 ~ 60° C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	70 x 70 mm
Operating System		Linux Kernel v3.14.52
Certifications		CE/FCC Class B

Block Diagram



* Solo SKU doesn't support

Ordering Information

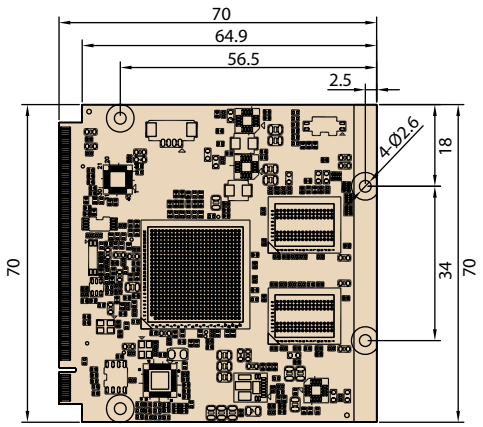
Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I²C	SPI	Size	Power Input	Operating Temperature
ROM-7421CE-MDA1E	i.MX6 Dual Plus 1 GHz	1 GB	4 GB	2	1	4	1	2 x 24-bit LVDS	1	1	1	1	1	2	1	70 x 70 x 5mm	5V	0 ~ 60° C
ROM-7421CU-MEA1E	i.MX6 Quad Plus 1 GHz	2 GB	4 GB	2	1	4	1	2 x 24-bit LVDS	1	1	1	1	1	2	1	70 x 70 x 5mm	5V	0 ~ 60° C
ROM-7421CX-MDA1E	i.MX6 Solo 1 GHz	1GB	4GB	2	1	4	1	2x24bit LVDS	-	1	1	1	1	2	1	70 x 70 x 5mm	5V	0 ~ 60° C

Development Board

Part No.	Description
ROM-DB7501-SCA1E	Development board for RISC Qseven 2.0 module

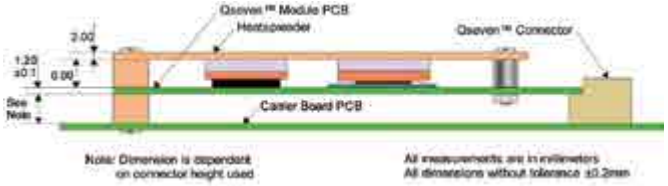
Dimensions

Unit: mm



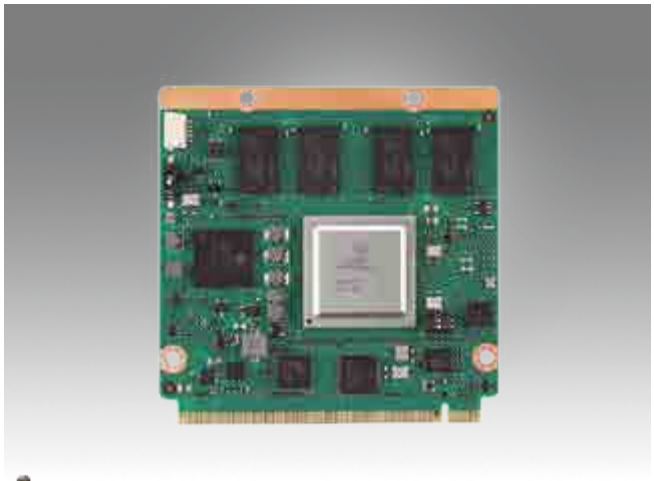
Optional Accessories

Part No.	Description
1700022373-01	Debug Port Cable for ROM-7421
9696ED2000E	Debug Port Adapter for ROM-7421
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Code 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85° C)
EWM-W142F01E	802.11 b/g/n,AR9287,2T2R,Full size Mini PCIe
1750007050-01	WiFi RP-SMA short SMA Jack(9.5mm) to U.FL_100mm (WiFi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (WiFi Antenna)
968EMW0093	Telit HE910-D Mini PCIE
1750007156-01	Cellular/GPS SMA Short JACK(9.5MM) L=100mm (3G Cable)
1750005865	Antenna L=10.9cm 50Ohm AN8921F-5701SM (3G Antenna)
1960061913N001	Heatsink O-Freescale-S-5W 70x63x8-SC ROM-7420-60



ROM-7510

TI Sitara™ AM5728 Cortex -A15 1.5GHz Qseven Module



Features

- TI Sitara AM5728 Dual core cortex-A15 1.5GHz high performance processor
- Onboard DDR3 memory 2 GB and eMMC Flash 8 GB
- Support 1 LVDS, 1 HDMI, 1 USB2.0 OTG, 4 USB2.0 HOST, 1 USB3.0, 2 UART, 1 CAN, 1 SATA, 2 I²C, 1 I²S, 2 PCIE 1 lane,
- Operating temperature 0 ~ 60 °C / -40 ~ 85 °C
- Low power consumption, fanless design
- Supports Linux BSP

Introduction

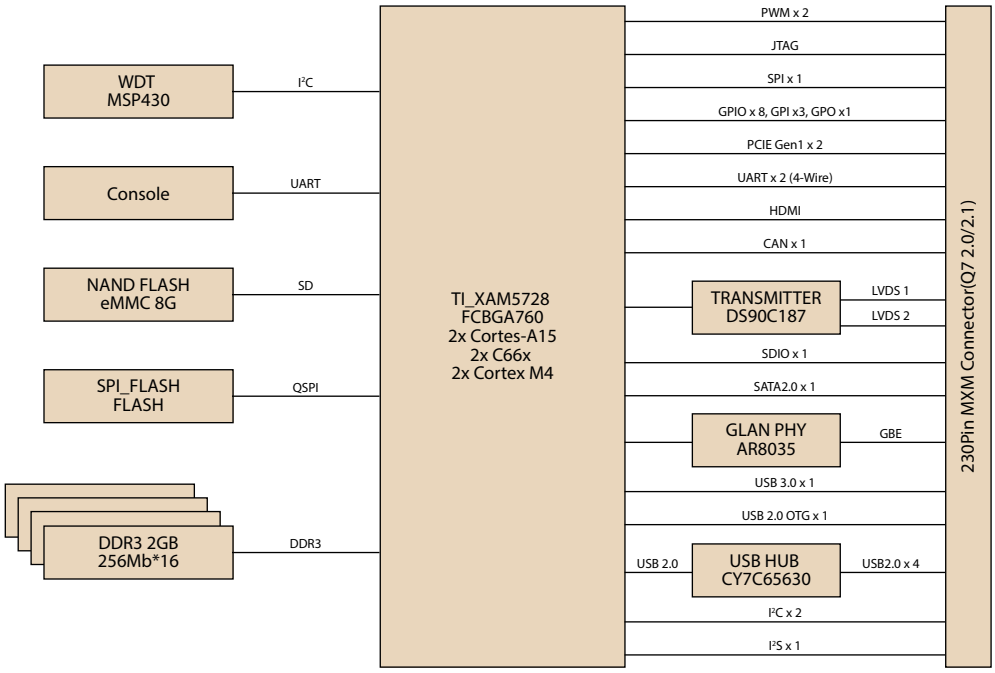
ROM-7510 Qseven Module integrates ARM Cortex-A15 TI AM5728 high performance SoC and I/O solution chips to be Linux support ready. TI AM5728 is provided by dual-core ARM Cortex-A15 RISC CPUs with Neon™ extension, and two TI C66x VLIW loating-point DSP cores. The ARM allows developers to keep control functions separate from other algorithms programmed on the DSPs and coprocessors, thus reducing the complexity of the system software.

ROM-7510 has Advantech ROM-DB7502 Evaluation Carrier Board for easy integration and design reference; we also offer referenced schematics and layout checklists for carrier board development. Additionally, Linux BSP, test utilities, HW design utilities and reference codes are ready for application development and device integration.

Specifications

Form Factor		Qseven
Processor System	CPU	TI ARM Cortex-A15 Sitara AM5728 1.5GHz
Memory	Technology	DDR3 on board 1066MHz
	Capacity	2GB
	Flash	8GB eMMC NAND Flash for O.S & 4MB SPI NOR Flash for ADV loader
Graphics	LVDS	1 x Dual channel 24-bit LVDS, 1920 x 1200
	HDMI	1
	Parallel RGB	-
	Graphics Engine	2 IPUs, Vivante™ GC320 for 2D, PowerVR® SGX544 for 3D
Ethernet	Chipset	TI AM5728 Integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		MSP430 (time out : 0.1~6553.5s, power on/off 4s)
I/O	USB	1 x USB3.0, 1 x USB 2.0 OTG, 4 x USB2.0 Host
	I²S	1
	SDIO	1
	UART	2 x UART w/ 4wires
	SPI	1
	CAN	1
	GPIO	8
	I²C	2
	SATA	1
	PCIE	2, 1-lane
	PWM	2
Power	Power Supply Voltage	5V DC, AT/ATX
	Power Consumption	TBD
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	70 x 70 mm
Operating System	Linux	Kernel 4.4.19
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash	Parallel RGB	LAN	GPIO	USB 3.0	USB 2.0	I²C	I²S	SDIO	SPI	UART	CAN	Operating Temperature
ROM-7510CD-PEA1E	TI Sitara AM5728	2GB	8GB	-	1	8	1	5	2	1	1	1	2	1	0 ~ 60 °C
ROM-7510WD-PEA1E	TI Sitara AM5728	2GB	8GB	-	1	8	1	5	2	1	1	1	2	1	-40 ~ 85 °C

Development Board

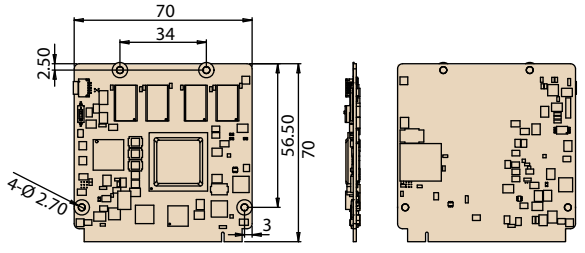
Part No.	Description
ROM-DB7502-SCA1E	Development Board for Qseven 2.0/2.1 Module

Optional Accessories

Part Number	Description
9696ED2000E	Debug adapter board
1700022373-01	Debug port cable for ROM-3420/5420/3310
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Code 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85 °C)

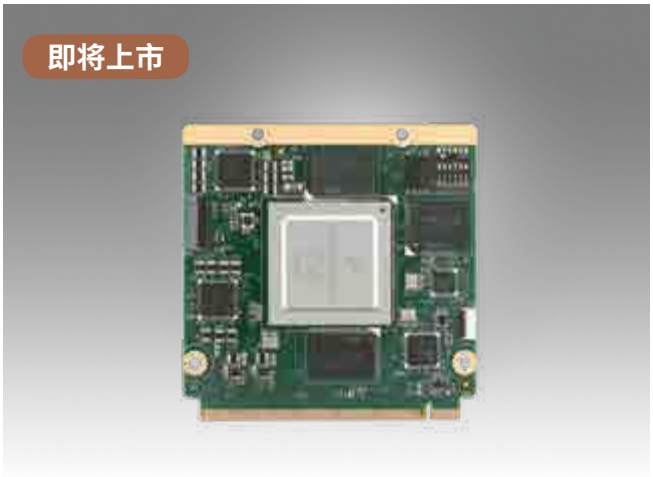
Dimensions

Unit: mm



ROM-7720

NXP ARM Cortex-A72 i.MX8 QuadMax Qseven 2.1 Module



特点

- NXP ARM Cortex-A72 + A53 i.MX8 QuadMax 1.6GHz high performance processor
- Onboard DDR4 memory 2 GB
- Onboard eMMC NAND Flash 8 GB
- Supports OpenGL 3.0, 2.1; OpenGL ES 3.2; Open GL ES 3.1 (with AEP); Open GL ES 3.0, 2.0, and 1.1; OpenCL 2.0 and 1.1; OpenVG 1.1; and Vulkanc
- HDMI 4K, Dual Channel 24bit LVDS
- 1 CAN, 2 UART, 2 I2C, 8 GPIO, 1 I2S
- 3 USB 3.0; 1 USB OTG
- 1 SDIO, 1 SATA III
- 1 10/100/1000 Mbps Ethernet; 2 PCIe x1 Gen2
- Optional thermal solution

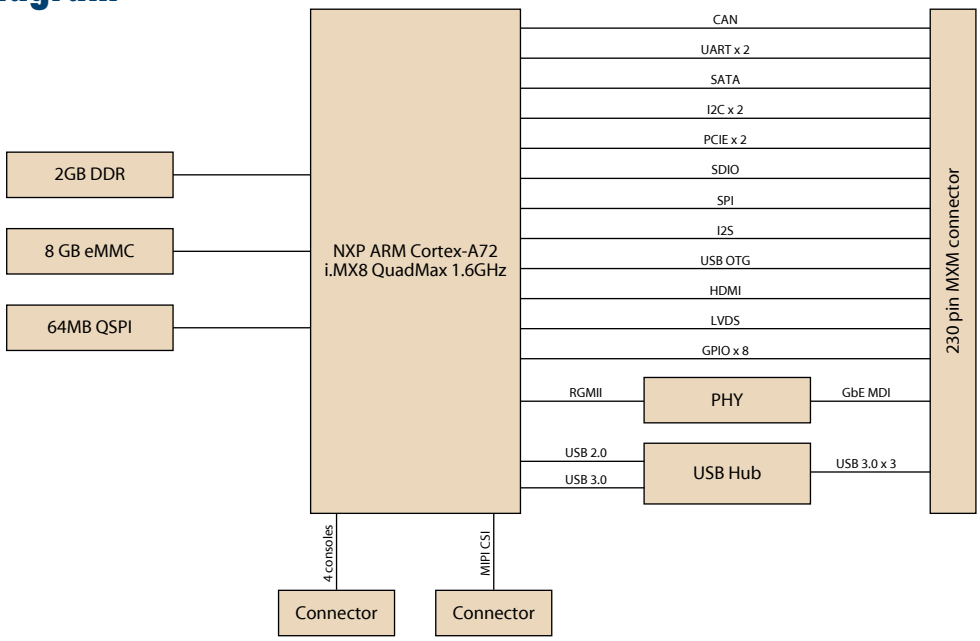
Introduction

ROM-7720 Qseven 2.1 Module powered by i.MX8 QuadMax Processor, which compose eight cores, including 2 ARM Cortex-A72 cores, 4 Cortex-A53 cores and 2 Cortex-M4F cores into one single package. ROM-7720 also escalate its graphic performance by dual 32-core GPU subsystems, 4K H.265 capable VPU, and dual failover-ready display controllers. The enhanced HAB secure & encrypted boot bring you a worry-free module platform for surveillance an video analysis application.

Specifications

Form Factor		Qseven 2.1
Processor System	CPU	NXP ARM Cortex-A72 i.MX8 QuadMax 1.6GHz 8 -Core Processor
Memory	Technology	LPDDR4 1600
	Capacity	On-board DDR4 2 GB
	Flash	8 GB eMMC NAND Flash for O.S. and 64 MB Quad SPI Flash for boot loader
Graphics	LVDS	2 x 24-bit LVDS, 1366 x 768 for 1ch; 1920 x 1080 for 2ch
	HDMI	4K @ 30fps
	Graphics Engine	TBD
	H/W Video Codec	Decoder: MPEG-4 ASP, H.265 HP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.265 BP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX8 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog Timer		HW Watchdog Timer
I/O (Edge finger)	PCIe	2 PCIe
	SATA	1 SATA III
	USB	3 USB 3.0, 1 USB OTG
	I²S	1
	SPDIF	-
	SDIO	1
	Serial Port	2 UART (4 wire)
	SPI	1
	CAN	1
	GPIO	8
	I²C	2
	System Bus	-
	Fan Control (PWM)	2
	Keypad	-
I/O (On board)	UART	1 (for console)
	SD	-
	Camera	-
Power	Power Supply Voltage	5 V
	Power Consumption	TBD
Environment	Operational Temperature	0 ~ 60° C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	70 x 70 mm
Certifications		CE/FCC Class B

Block Diagram



OS Specification

Operating System	Version Support
Linux	Yocto 2.1 and later version
Android	Android 6.0 and later version

SW Specification

Software Application	Function Support
SUSI API	I2C, GPIO, SPI, WDT, RTC, Backlight Control
WISE-Paas/ EdgeSense	Optional
WISE-Paas/RMM	Built-in
WISE-Paas/OTA	Built-in
mbed Edge	Optional
Licensing Mechanism	Built-in
Secure Boot	Optional
Multi Boot	Built-in
Quick Boot	Optional

Optional Accessories

Part No.	Description
1700022373-01	Debug Port Cable for ROM-7720
9696ED2000E	Debug Port Adapter for ROM-7720
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Code 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85° C)
EWM-W142F01E	802.11 b/g/n,AR9287,2T2R,Full size Mini PCIe
1750007050-01	WiFi RP-SMA short SMA Jack(9.5mm) to U.FL_100mm (WiFi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (WiFi Antenna)
968EMW0093	Telit HE910-D Mini PCIE
1750007156-01	Cellular/GPS SMA Short JACK(9.5MM) L=100mm (3G Cable)
1750005865	Antenna L=10.9cm 50Ohm AN8921F-5701SM (3G Antenna)

Ordering Information

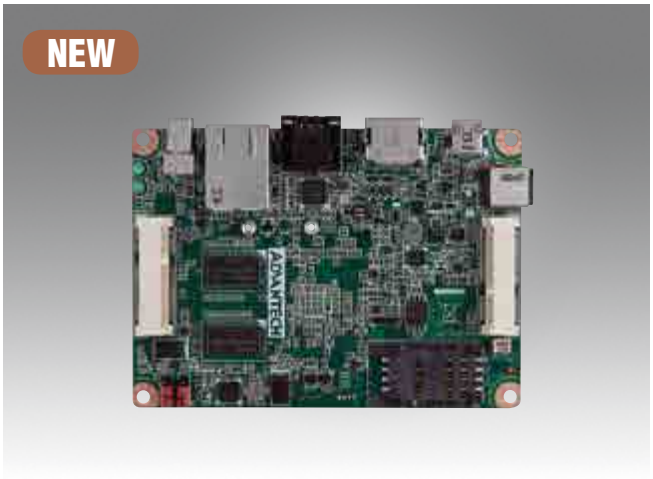
Part No.	CPU	Memory	Flash Memory	UART	LAN	USB Host	USB OTG	Display	SATA	PCIe	HDMI	SD	CANbus	I²C	SPI	Size	Power Input	Operating Temperature
ROM-7720CO-QEA1E	i.MX8 Quad Max 1.6GHz	2 GB	8 GB	2	1	6	1	2 x 24-bit LVDS	1	2	1	1	1	2	2	70 x 70 x 5mm	5V	0 ~ 60° C

Development Board

Part No.	Description
ROM-DB7503-SCA1E	Development board for RISC Qseven 2.1 module

RSB-3410

NXP ARM® Cortex®-A9 i.MX6 2.5" SBC



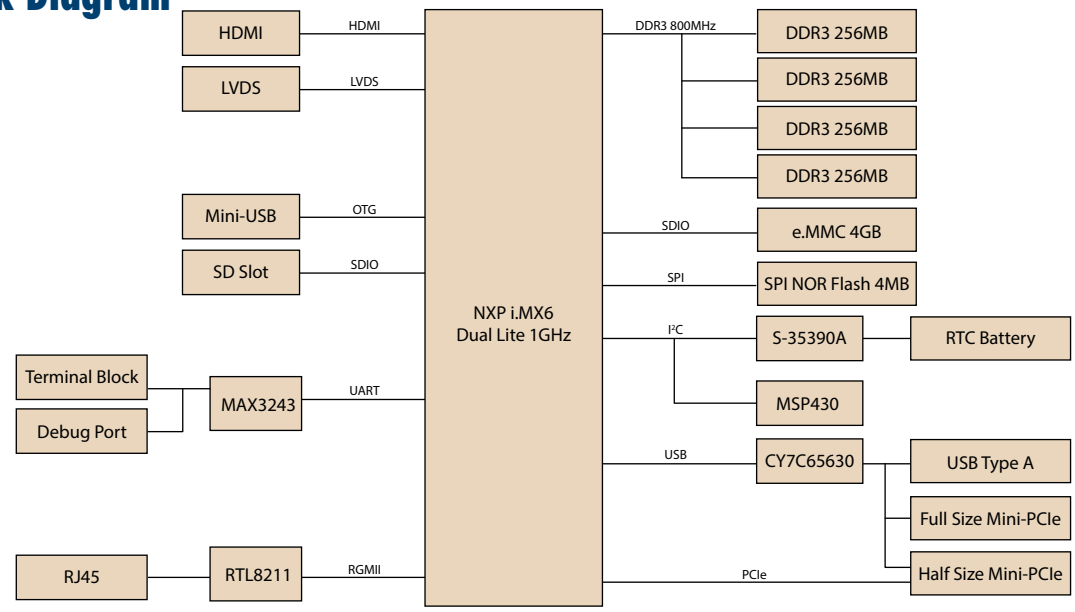
特点

- NXP ARM® Cortex®-A9 i.MX6 Dual Lite 1 GHz
- Onboard DDR3 1 GB, 800 MHz memory
- HDMI 1920x1080 at 60Hz, Single Channel 18/24 bit LVDS
- 1 4-wire UART, 1 USB 2.0, 1 USB OTG
- 2 mini-PCIe for WIFI/3G support
- Low power consumption, fanless design
- Supports Linux and Android

Specifications

Form Factor		2.5" SBC
Processor System	CPU	NXP i.MX6 Cortex-A9 Dual Lite 1 GHz
Memory	Technology	DDR3 800 MHz
	Capacity	On-board DDR3 1 GB
	Flash	4 GB eMMC Flash for O.S. and 4 MB NOR Flash for Advantech boot loader
Graphics	HDMI	1 HDMI, 1920 x 1080 at 60Hz
	LVDS	Single Channel 18/24 bit LVDS
	Graphics Engine	1 IPU. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 10/100/1000 Mbps
WatchDog Timer	WatchDog Timer	1~6553s, power on/off 4s
I/O	USB	1 USB 2.0 Host
	USB OTG	1 USB 2.0 OTG
	SDIO	1 SD Slot
	Serial Port	1 4-wire RS-232 (Tx, Rx, RTS, CTS)
Indicator	LED	1 Green LED for the system power 1 Green LED (for user define)
Expansion	Full Size Mini PCIe	1
	Half Size Mini PCIe	1
	SD Socket	1
	SIM Slot	1
Power	Power Supply Voltage	+12 V
	Power Type	DC-in
	Power Consumption	4.4W (Max)
Environment	Operating Temperature	0 ~ 60 °C
	Operating Humidity	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions	100 x 72 x 19 mm
	Weight	210g
Operation System		Linux & Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB Host	System bus	SD	CANbus	Operating Temperature
RSB-3410DL-MDA1E	NXP i.MX6 Dual Lite 1 GHz	1 GB	4 GB	1	-	1	1	1 x 4 wire RS-232	-	1 USB2.0 1 OTG	-	1	-	0 ~ 60 °C

Packing List

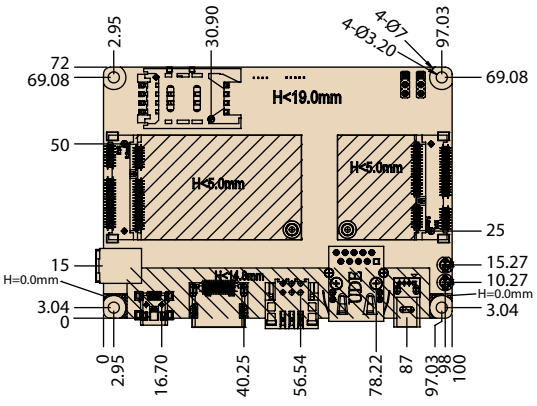
Part Number	Description
9696341000E	RSB-3410 2.5" SBC
1652006794-01	Terminal Block 6 Pin

Optional Accessories

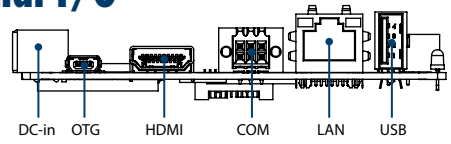
Part Number	Description
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85 °C)
EWM-W142F01E	802.11 b/g/n,AR9287,2T2R,Full size Mini PCIe
EWM-W151H01E	Advantech 802.11bgn RTL8188EE 1T1R, 1-connector
EWM-C106FT02E	HSPA/WCDMA/GPRS Cellular module
1750006043	Cable R/P SMA (M) to MHF 1.32 150mm (Wi-Fi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (Wi-Fi Antenna)
1750006264	Antenna SMA(F)/MHF 15cm SMALFN8-3150A-00X00R (3G Cable)
1750005865	Antenna L 10.9cm 50Ohm AN8921F-5701SM (3G Antenna)
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Cord 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm

Dimensions

Unit: mm



External I/O



RSB-3430

NXP ARM® Cortex®-A9 i.MX6 2.5" SBC

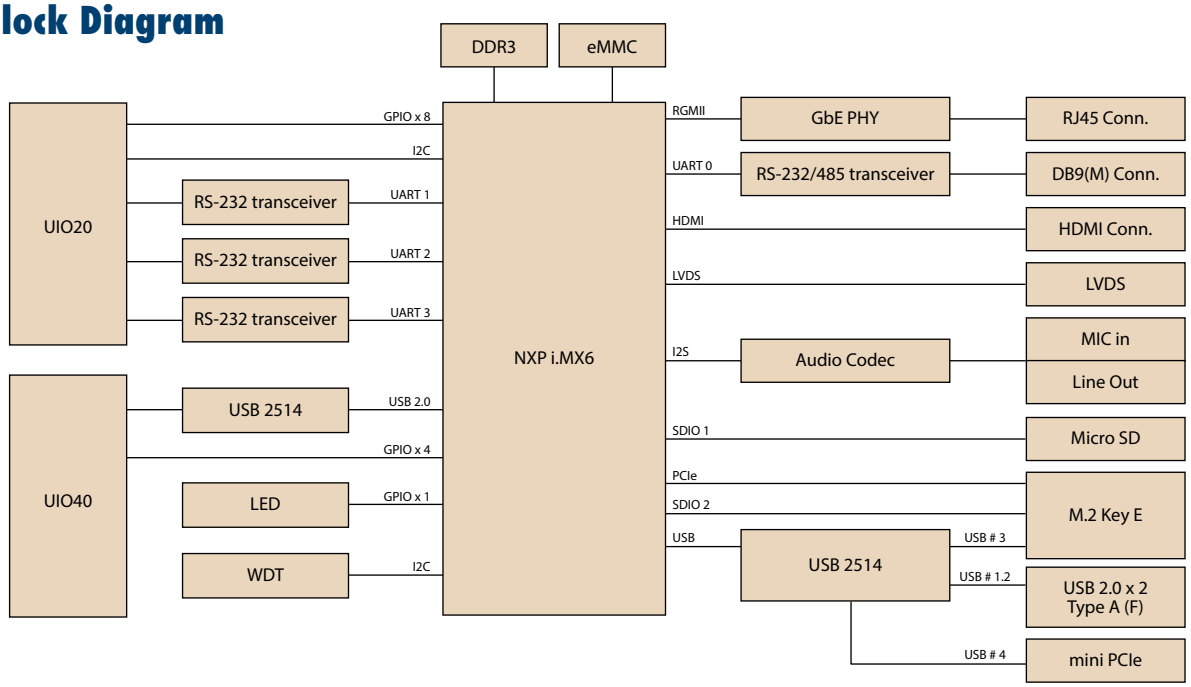
特点

- NXP ARM® Cortex®-A9 i.MX6 Dual-Lite 1 GHz
- Onboard DDR3 1 GB, 800 MHz memory
- HDMI 1920x1080 at 60Hz, Dual Channel 18/24 bit LVDS
- 1 4-wire RS-232/RS-485, 2 USB 2.0, 1 Micro SD, 1 Mic. in / Line out
- 1 mini-PCIe for 3G/4G, 1 M.2 Key E, Type 2230
- UIO expansion 4 USB2.0, 12 GPIO, 2 2 wires UART, 1 2 wires UART/ CAN, 1 I2C
- Supports Ycoto Linux, Ubuntu and Android

Specifications

Form Factor		2.5" SBC
Processor System	CPU	NXP i.MX6 Cortex-A9 Dual-Lite 1 GHz
Memory	Technology	DDR3 1066 MHz
	Capacity	On-board DDR3 1 GB
	Flash	4 GB eMMC Flash for O.S. and 4 MB NOR Flash for Advantech boot loader
Graphics	HDMI	1 HDMI, 1920 x 1080 at 60Hz
	LVDS	Dual Channel 18/24 bit LVDS, Backlight power, 5/12V, Max. 1A
	Graphics Engine	1 IPU. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 10/100/1000 Mbps
WatchDog Timer	WatchDog Timer	1~6553s, power on/off 4s
I/O	USB	2 USB 2.0 Host
	Audio	1 Mic. in / Line out
	SDIO	1 Micro SD
	Serial Port	1 4 wires RS-232/RS-485
	UIO20	4 USB 2.0, 4 GPIO
	UIO40	3 UART, 1 I2C, 8 GPIO
Indicator	LED	1 Green LED for the system power 1 Green LED (Programmable)
Expansion	Full Size Mini PCIe	1 (Only USB signal)
	M.2	1 Key E, Type 2230
	SD Socket	1 Micro SD
	SIM Slot	1
Power	Power Supply Voltage	+12 V
	Power Type	DC-in
	Power Consumption	TBD
Environment	Operating Temperature	0 ~ 60 °C
	Operating Humidity	5%~95% Relative Humidity, non-condensing
Mechanical	Dimensions	100 x 72 x 19 mm
	Weight	210g
Operation System		Yocto Linux, Ubuntu and Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB Host	System bus	SD	CANbus	Operating Temperature
RSB-3430DL-MDA1E	NXP i.MX6 Dual-Lite 1 GHz	1 GB	4 GB	1	-	1	1	1 x 4 wire RS-232	-	2	-	1	-	0 ~ 60 °C

Packing List

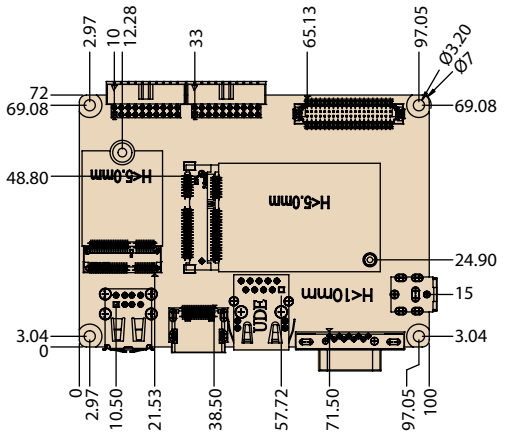
Part Number	Description
9696343000E	RSB-3430 2.5" SBC

Optional Accessories

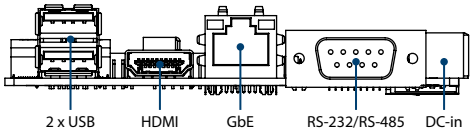
Part Number	Description
96PSA-A36W12R1	ADAPTER 100-240V 36W 12V 3A
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85 °C)
EWM-C106FT02E	HSPA/WCDMA/GPRS Cellular module
1750006264	Antenna SMA(F)/MHF 15cm SMALFN8-3150A-00X00R (3G Cable)
1750005865	Antenna L 10.9cm 50Ohm AN8921F-5701SM (3G Antenna)
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Cord 3P Europe (WS-010+WS-083)183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm

Dimensions

Unit: mm



External I/O



RSB-4220

TI Sitara™ ARM® AM3352 Cortex®-A8 3.5" SBC

特点

- TI Sitara™ ARM® AM3352 Cortex®-A8 1.0GHz
- On-board DDR3 800MHz 512MB & 4MB SPI NOR Flash & 4GB eMMC NAND Flash
- Supports 4GPI / 4GPO w/isolation
- 5x serial port w/ESD protection (Contact 4KV / Air 8KV)
- Supports 2x Gigabit Ethernet ports and 1x Mini PCIe socket
- Supports 18-bit LVDS with up to 1366 x 768 resolution
- HW WTD for system protection
- Operating temperature 0 ~ 60 °C / -40 ~ 85 °C
- Lower power consumption, fanless design
- Supports Linux BSP

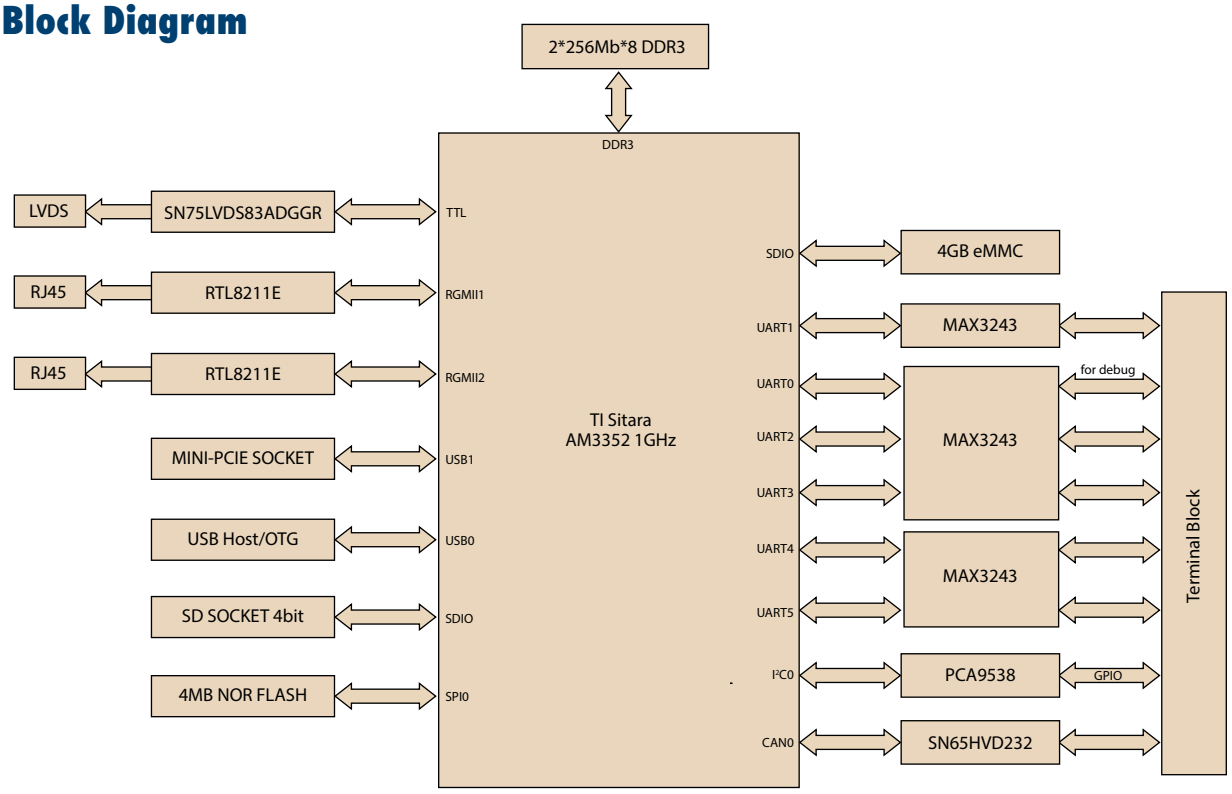
Introduction

The RSB-4220 series comprises RISC SBCs with integrated TI Sitara AM3352 Cortex-A8 processors. Units offer 2x gigabit Ethernet, 5x serial ports, 4x GPI and 4x GPO. For industrial applications, the serial port & GPIO feature rugged ESD and isolation that protect the system from unstable power damage. Also, RSB-4220 has multiple power inputs and operating temperature support, and even supports a single channel 18-bit LVDS with up to 1366 x 768 resolution. It is an ideal solution for automation control such as smart grid, and machinery automation applications.

Specifications

Form Factor		3.5" SBC	
Processor System	CPU	TI Sitara AM3352 Cortex A8 1.0GHz	
	Capacity	On-board DDR3 800MHz 512MB	
	Flash	4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for ADV loader	
Graphics	LVDS	Supports 18-bit LVDS with up to 1366 x 768 resolution	
Ethernet	Chipset	TI AM3352 integrated RGMII	
	Speed	2 x 10/100/1000 Mbps	
WatchDog Timer		MSP430G2202 (time out:1~6553s,default 60s/power on/off 1s)	
I/O	USB	1x USB2.0 HOST /OTG (By jumper selection)	
	Serial Port	5 (1x 4 wires RS-232/422/485, 4x 2 wires RS-232) The 5 serial port w/ ESD protection (Contact 4KV/ Air 8KV)	
	CAN	1x CAN bus version 2.0 A and B	
	GPIO	4x GPI/4x GPO (w/isolation) **GPI:** Isolation: 0 ~ 50Voc input and 10KHz speed	**GPO:** Isolation: 5 ~ 40Voc output and 10KHz speed (200mA max/chanel sink current)
	I²C	1	
	Button	1x Reset	
Expansion	Mini PCIe	1x mini-PCIe socket (USB signal only)	
	SD Socket	1x SD slot	
Power	Power Supply Voltage	+ 12/19/24 VDC-In	
	Power Type	Two poles lockable DC-in	
	Power Consumption	3.3W (Max)	
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C	
	Operating Humidity	5%~95% Relative Humidity, non-condensing	
Mechanical	Dimensions (W x D x H)	146 x 102 x 1.6 mm	
Operating System		Linux	
Certifications		CE/FCC Class B	

Block Diagram



Ordering Information

Part Number	CPU	Memory	eMMC	LCD	SD	CAN	Serial	GPIO	Isolation	ESD	USB host/ OGT	LAN	Heatsink	mini-PCIe	Operation Temperature
RSB-4220CS-MCA1E	TI AM3352 1.0GHz	512MB	4GB	1	1	1	5	8	Serial: No GPIO: Yes	Serial: Yes GPIO: Yes	1	2	N/A	1	0 ~ 60 °C
RSB-4220WS-MCA1E	TI AM3352 1.0GHz	512MB	4GB	1	1	1	5	8	Serial: No GPIO: Yes	Serial: Yes GPIO: Yes	1	2	1	1	-40 ~ 85 °C

Packing List

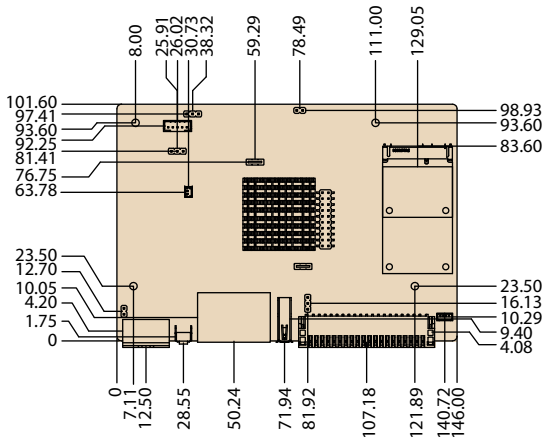
Part Number	Description	Quantity
1652006830-01	TERMINAL BLOCK 20x2P 2.54mm 180D 0156-1A40	1
RSB-4220CS-MCA1E	RSB-4220 1GHz for 0 ~ 60 °C	Choose Any One
RSB-4220WS-MCA1E	RSB-4220 1GHz for -40 ~ 85 °C	

Optional Accessories

Part Number	Description
96PSA-A36W12R1	ADP A/D 100-240V 36W 12V
1700023307-01	DC JACK to Plug-in cable
1700001524	Power Cord 3P UL 10A 125V 180cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
170203183C	Power Cord 3P Europe (WS-010+WS-083)183cm
SQF-ISDS1-4G-82C	SQFlash SD card 4G
96LEDK-A070WV40NB1	7" LED PANEL 350N 800X480(G) G070VW01 V1
1700023366-01	LCD blacklight cable
1700024543-01	LVDS cable
1700021565-11	D-SUB 9P cable for debug

Dimensions

Unit: mm



RSB-4221

TI Sitara™ ARM® AM3358 Cortex®-A8 3.5" SBC

Features

- TI Sitara AM3358 Cortex A8 1.0GHz
- On board DDR3 800MHz 512MB memory and 4GB NAND flash EMMC
- Supports 18-bit LVDS with up to 1366 x 768 resolution
- Hardware watchdog timer for system protection
- M.2 E-key slot for WI-Fi/Bluetooth module
- Operating temperature 0~60°C
- Lower power consumption, faneless design
- Supports Linux and Android BSP

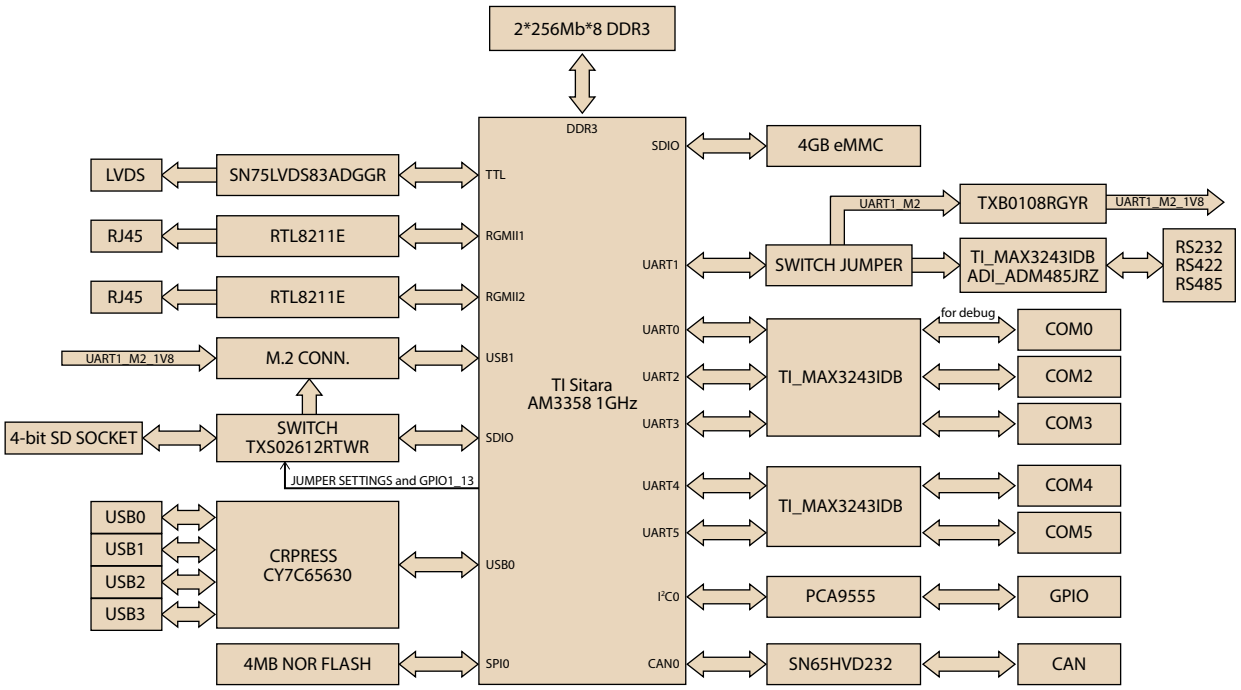
Introduction

RSB-4221 is a RISC single board computer (SBC) integrated with a TI Sitara AM3358 Cortex-A8 processor. This system features two gigabit Ethernet ports, five serial ports, four USB host ports, a hardware watchdog timer, as well as M.2/SD to enable Wi-Fi and Bluetooth. RSB-4221 also supports touch panel control via USB and single-channel 18-bit LVDS with up to 1366 x 768 resolution, providing the ideal automation control solution for smart grid, industrial, and machine automation applications.

Specifications

Form Factor		3.5" SBC
Processor System	CPU	TI Sitara AM3358 Cortex A8 1.0 GHz
	Capacity	Onboard DDR3 800 MHz 512 MB
	Flash	4 GB eMMC NAND Flash for OS and 4 MB SPI NOR Flash for ADV loader
Graphics	LVDS	Supports 18-bit LVDS with up to 1366 x 768 resolution
	Touch	Yes, via USB signal
Ethernet	Chipset	TI AM3358 integrated RGMII
	Speed	2 x 10/100/1000 Mbps
WatchDog Timer		MSP430G2202 (time out: 1 ~ 6553 s, default 60 s/power on/off 1 s)
I/O	USB	4 x USB 2.0 hosts (2 x USB ports and 2 x pin headers)
	Serial	1 x 4-wire RS232/422/485 and 4 x 2-wire RS232 ports
	CAN	1
	GPIO	12
	I²C	1
	Recovery	1 x recovery button (for Android)
Expansion	M.2	1 x M.2 for Wi-Fi and Bluetooth
	SD Socket	1 x SD (optional w/ M.2)
Power	Power Supply Voltage	+12V DC-in
	Power Type	2-pole lockable DC-in
	Power Consumption	TBC
Environment	Operating Temperature	0 ~ 60 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D x H)	146 x 102 x 1.6 mm
Operating System	Android	4.2.2
	Linux	Kernel 3.2.0
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part Number	CPU	Memory	eMMC	SPI	LCD	SD	CAN	UART	GPIO	Touch	USB Host	LAN	M.2	Operating Temperature
RSB-4221CS-MCA1E	TI AM3358 1 GHz	512 MB	4 GB	4 MB	1	1	1	5	12	1	4	2	1	0 ~ 60 °C

Packing List

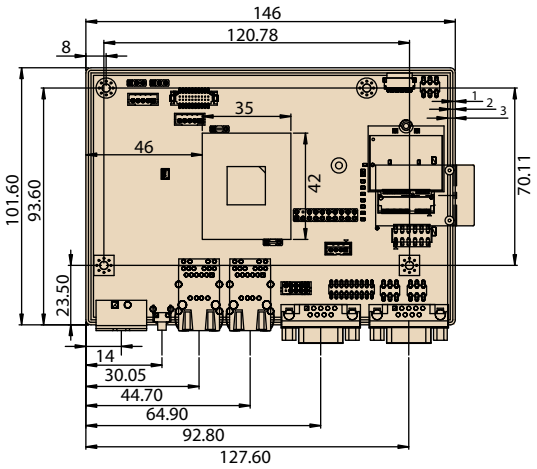
Part Number	Description	Quantity
RSB-4221CS-MCA1E	RSB-4221 TI AM3358 1 Ghz 512 MB	1

Optional Accessories

Part Number	Description
1700022161-01	A cable D-SUB 9P(F) 1-to-2 UART cable
96PSA-A36W12R1	A/D 100 ~ 240 V, 36 W, 12 V
1700023575-01	CAN cable
1700023576-01	A cable USB-A 1-to-2 cable
1700019474	D-SUB 9P(F)/D-SUB 9P(F) Debug/RS232/RS485 cable
SQF-ISDS1-4G-82C	SQF SD C6 SLC 4G, 1CH
170203183C	Power cord 3P Europe (WS-010 + WS-083)183 cm
1700023307-01	DC jack/plug-in 1*2P-5.0 10 cm RSB-4220 cable
1700023366-01	Backlight cable
1700024543-01	LVDS cable
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm
IDK-1107WR-40WVA1E	7-inch LCD w/ touch control

Dimensions

Unit: mm



RSB-4410

NXP ARM® Cortex®-A9 i.MX6 3.5" SBC

特点

- NXP ARM® Cortex®-A9 i.MX6 Dual/Quad 1 GHz
- Onboard 1/2GB DDR3 memory and 4GB eMMC
- HDMI and VGA 1920x1080 at 60Hz, Single Channel 18/24 bit LVDS
- 3 UART, 1 GbE, 3 USB 2.0
- mini-PCIe for WIFI/3G support
- Low power consumption, fanless design
- Supports Linux and Android

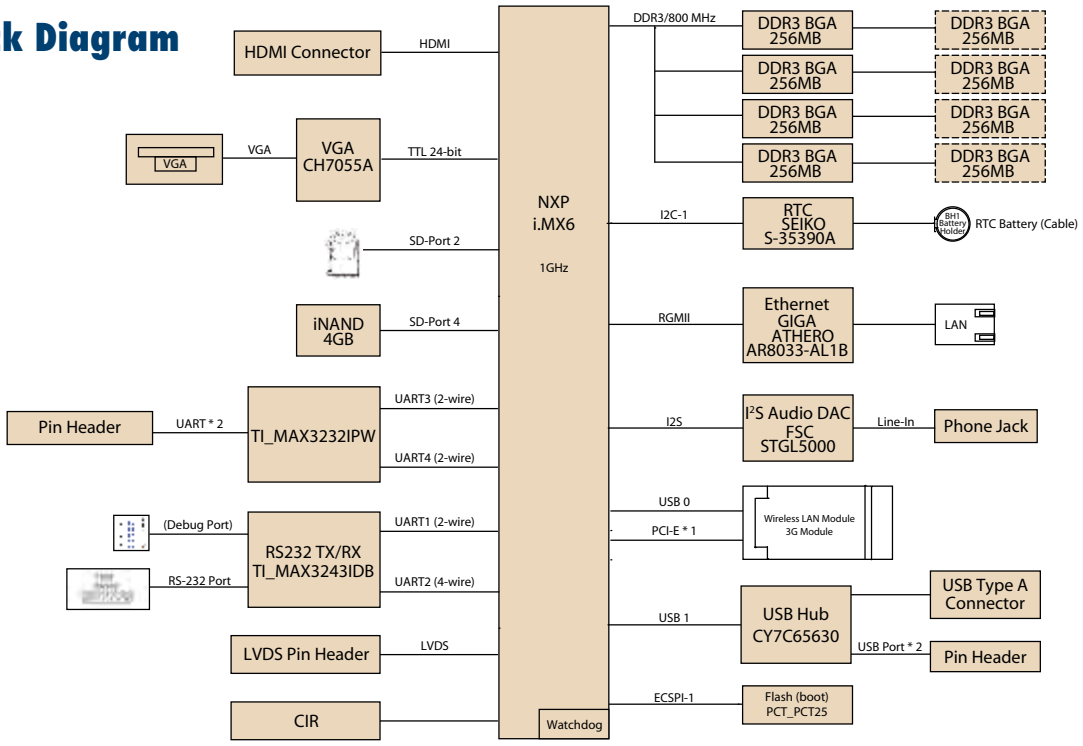
Introduction

RSB-4410 is a RISC 3.5" single board computer (SBC) powered by a high-performance NXP ARM® Cortex®-A9 i.MX6 processor that supports full HD video encoding/decoding and Gigabit Ethernet networking. RSB-4410 also features mini PCIe and SIM card slots for integrating Wi-Fi and 3G modules. This system can be equipped with Linux BSP V3.0.35 or Android BSP 4.2.2, enabling customers to develop unique application software.

Specifications

Form Factor		3.5" SBC	
Processor System	CPU	NXP ARM® Cortex®-A9 i.MX6 dual-core processor at 1 GHz	NXP ARM® Cortex®-A9 i.MX6 quad-core processor at 1 GHz
	Technology	DDR3 1066 MHz	
	Capacity	On-board DDR3 1GB	On-board DDR3 2GB
	Flash	4 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for Advantech's boot loader	
Graphics	LVDS	1 single-channel 18/24-bit LVDS	
	HDMI	1 HDMI, 1920 x 1080 at 60Hz	
	VGA	1 VGA, 1920 x 1080 at 60Hz	
	Graphics Engine	3 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1	
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP	
Ethernet	Chipset	NXP i.MX6 integrated RGMII	
	Speed	1 x 10/100/1000 Mbps	
WatchDog Timer		256-level timer intervals, from 0 ~ 128 sec	
I/O	SATA	-	
	SATA Power	-	
	USB	1 x Type A USB and 2 USB pin headers	
	Audio	1 x line-out	
	SPDIF	-	
	SDIO	-	
	Serial Port	2 x 2-wire RS-232 pin headers 1 x 4-wire RS-232, DB9	
	SPI	-	
	CAN	-	
	GPIO	-	
	I2C	-	
	System Bus	-	
	Touch	-	
	I/R	1 x I/R remote control pin header	
	Button	1 x reset button	
Expansion	Mini PCIe	1 x mini PCIe slot	
	SD Socket	1 x SD slot	
	SIM	1 x SIM slot	
Power	Power Supply Voltage	12 V	
	Power Type	DC-in	
	Power Consumption	2.3W (Max)	
Environment	Operating Temperature	0 ~ 60 °C/-40 ~ 85 °C	
	Operating Humidity	5 ~ 95% relative humidity, non-condensing	
Mechanical	Dimensions (W x D)	146 x 102 x 20 mm	
Operation System		Linux and Android	
Certifications		CE/FCC Class B	

Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash Memory	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB Host	System Bus	SD	CAN Bus	Operating Temperature
RSB-4410CD-MDA1E	NXP i.MX6 dual-core, 1 GHz	1 GB	4 GB	1	1	1	1	2 x 2-wire RS-232, 1 x 4-wire RSB-232	-	3	-	1	-	0 ~ 60 °C
RSB-4410WD-MDA1E	NXP i.MX6 dual-core, 1 GHz	1 GB	4 GB	1	1	1	1	2 x 2-wire RS-232, 1 x 4-wire RSB-232	-	3	-	1	-	-40 ~ 85 °C
RSB-4410CQ-MEA1E	NXP i.MX6 quad-core, 1 GHz	2 GB	4 GB	1	1	1	1	2 x 2-wire RS-232, 1 x 4-wire RSB-232	-	3	-	1	-	0 ~ 60 °C
RSB-4410WQ-MEA1E	NXP i.MX6 quad-core, 1 GHz	2 GB	4 GB	1	1	1	1	2 x 2-wire RS-232, 1 x 4-wire RSB-232	-	3	-	1	-	-40 ~ 85 °C

Packing List

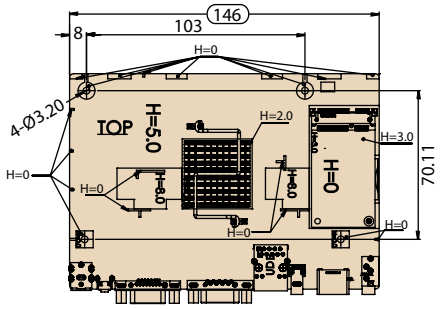
Part Number	Description	Quantity
RSB-4410	RSB-4410 SBC	1

Optional Accessories

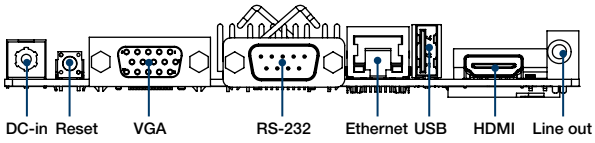
Part Number	Description
96PSA-A36W12R1	Adapter 100-240 36W 12V 3A 9NA0362308
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G, 1CH (-40 ~ 85 °C)
EWM-W142F01E	802.11 b/g/n,AR9287,2T2R,Full size Mini PCIe
EWM-W151H01E	Advantech 802.11bgn RTL8188EE 1T1R, 1-connector
EWM-C106FT02E	HSPA/WCDMA/GPRS Cellular module
1750006043	Cable R/P SMA (M) to MHF 1.32 150mm (Wi-Fi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (Wi-Fi Antenna)
1750006264	Antenna SMA(F)/MHF 15cm SMALFN8-3150A-00X00R (3G Cable)
1750005865	Antenna L 10.9cm 50Ohm AN8921F-5701SM (3G Antenna)
1960051438N001	Cooler I-NB-ICH7 S-3W 31x31x12-WC DAC-BC05 40C
1700021565-01	Debug cable
1700018730	USB cable
1700022161-01	UART cable
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm

Dimensions

Unit: mm



External I/O



RSB-4411

NXP ARM® Cortex®-A9 i.MX6 3.5" SBC

NEW

Features

- NXP ARM® Cortex®-A9 i.MX6 Dual/Quad up to 1 GHz
- Onboard 1GB DDR3 memory and 4GB eMMC
- HDMI and VGA 1920x1080 at 60Hz, Dual Channel 18/24 bit LVDS
- 3 UART, 1 GbE, 5 USB 2.0, 20 GPIO, 2 I2C, 1 SPI
- M.2 for WIFI/BT support , mini-PCIe for WIFI/3G support
- Low power consumption, fanless design
- Supports Linux and Android

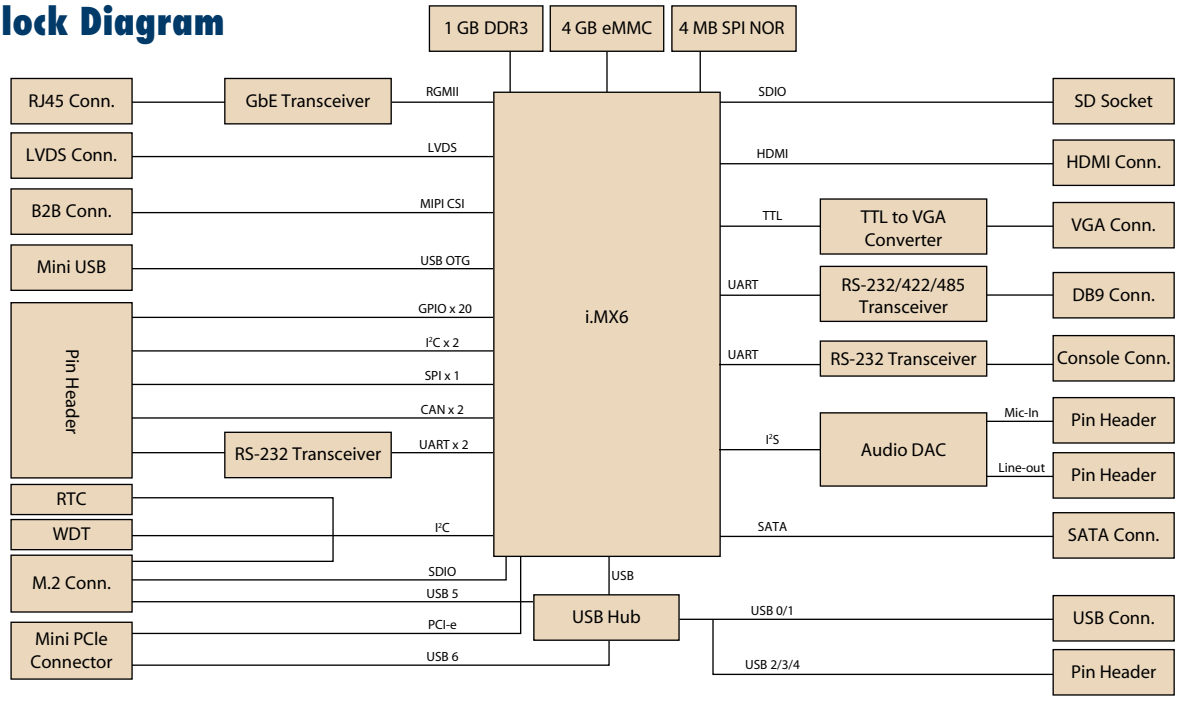
Introduction

RSB-4411 is a RISC 3.5" single board computer (SBC) powered by a high-performance NXP ARM® Cortex®-A9 i.MX6 processor that supports full HD video encoding/decoding and Gigabit Ethernet networking. RSB-4411 also features mini PCIe, M.2, and SIM card slots for integrating Wi-Fi, Bluetooth, and 3G/4G/LTE modules. Equipped with complete Linux and Android BSPs, this system enables customers to easily develop unique application software for specific OS.

Specifications

Form Factor		3.5" SBC
Processor System	CPU	NXP ARM® Cortex®-A9 i.MX6 Dual/Quad-core up to 1.0 GHz processor
	Technology	DDR3 1066 MHz
	Capacity	1 GB of DDR3 onboard
	Flash	4 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for Advantech's boot loader
Graphics	LVDS	1 x 18/24-bit LVDS with 1366 x 768 resolution for 1 channel; 1920 x 1080 resolution for 2 channels at 60Hz
	HDMI	1 HDMI, 1920 x 1080 at 60Hz
	VGA	1 VGA,1920 x 1080 at 60Hz
	Graphics Engine	3 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 10/100/1000 Mbps
WatchDog Timer		1~6553s, power on/off 4s
I/O	SATA	1
	SATA Power	1
	USB	1 x USB OTG, 2 x USB Type A, and 3 x USB pin headers
	Audio	1 x line-out, 1 x mic-in via a pin header
	SPDIF	-
	SDIO	-
	Serial Port	2 x 2-wire RS-232 pin header 1 x 4-wire RSB-232/422/485, DB9
	SPI	1
	CAN	2
	GPIO	20-pin 3.3V TTL level GPIOs
	I²C	2
	System Bus	-
	Touch	-
	I/R	-
	Button	-
Expansion	Mini PCIe	1 x mini PCIe slot
	SD Socket	1 x SD slot
	SIM Slot	1 x SIM slot
	M.2 Socket	1 x M.2 slot
Power	Power Supply Voltage	12 V, 19 V, 24 V
	Power Type	DC-in
	Power Consumption	-
Environment	Operating Temperature	0 ~ 60 °C/-40 ~ 85 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	146 x 102 x 20 mm
Operation System		Linux and Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB Host	System Bus	SD	CAN Bus	Operating Temperature
RSB-4411CD-PNA1E	NXP i.MX6 Dual-core, 1 GHz	1 GB	4 GB	1	1	1	1	1 x 4-wire RSB-232/422/485 2 x 2-wire RSB-232	1	5	_	1	2	0 ~ 60 °C
RSB-4411CQ-PNA1E	NXP i.MX6 Quad-core, 1 GHz	1 GB	4 GB	1	1	1	1	1 x 4-wire RSB-232/422/485 2 x 2-wire RSB-232	1	5	_	1	2	0 ~ 60 °C
RSB-4411WD-ONA1E	NXP i.MX6 Dual-core 800MHz	1GB	4GB	1	1	1	1	1 x 4-wire RSB-232/422/485 2 x 2-wire RSB-232	1	5	-	1	2	-40~85 °C
RSB-4411WQ-ONA1E	NXP i.MX6 Quad-core 800MHz	1GB	4GB	1	1	1	1	1 x 4-wire RSB-232/422/485 2 x 2-wire RSB-232	1	5	-	1	2	-40~85 °C

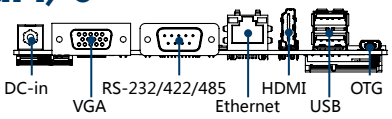
Packing List

Part Number	Description
RSB-4411	RSB-4411 3.5" SBC

Optional Accessories

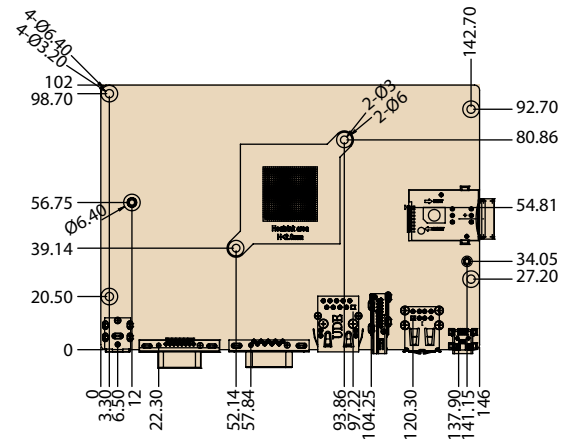
Part Number	Description
96PSA-A36W12R1	Adapter 100-240 36W 12V 3A 9NA0362308
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm
1700021565-01	Debug cable
1700018730	USB cable
1700026878-01	Mic-in cable
1700026879-01	Line-out cable
1700026880-01	CAN bus cable
1700026881-01	RS-232 cable

External I/O



Dimensions

Unit: mm



RSB-4760

Qualcomm ARM® Cortex®-A53 APQ8016 3.5" SBC

Features

- Qualcomm ARM® Cortex®-A53 APQ8016 Quad core up to 1.2 GHz
- Onboard 1GB/2GB LPDDR3 memory and 8GB eMMC
- 1 HDMI, 1 RS-232/422/485, 1 GbE, 4 USB 2.0, 16 GPIO, 1 I2C, 1 SPI
- Highly intergrated on-board wireless connectivity - Wi-Fi, BT, and GNSS
- Connevtivity expansion capability - M.2, mini-PCIe
- Wide voltage range DC power input
- Support Android, Linux and Debian

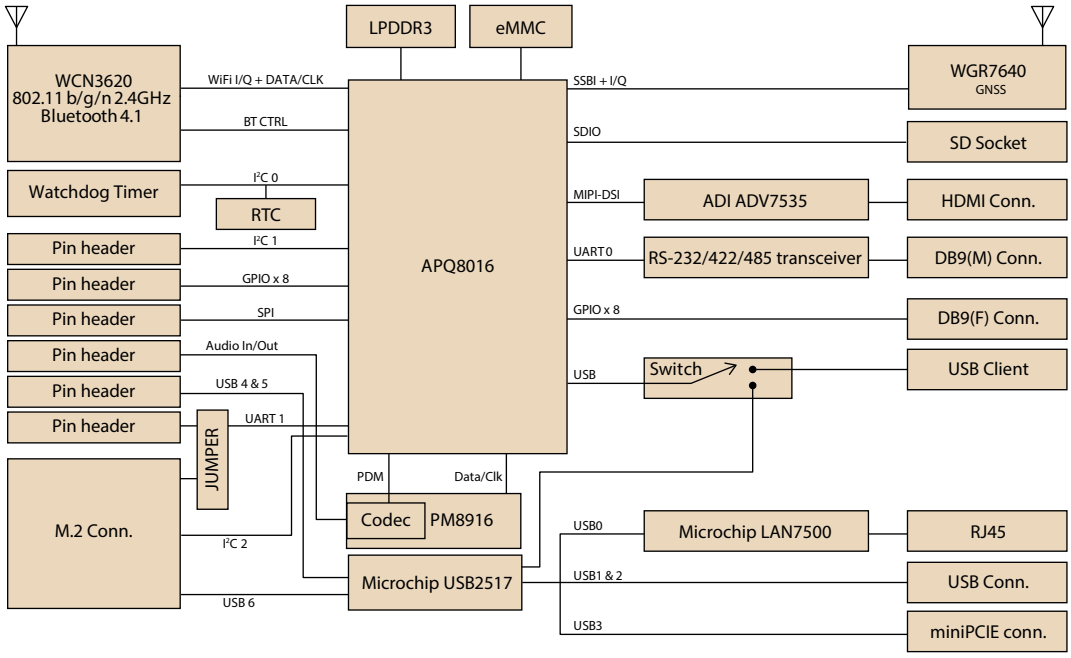
Introduction

RSB-4760 is a RISC 3.5" single board computer (SBC) powered by Qualcomm ARM® Cortex®-A53 APQ8016 processor that supports full HD display and intergrades on board wireless solution – Wi-Fi, BT and GNSS. RSB-4760 also features in mini PCIe, M.2, and SIM card slots for expanding connectivity capability, like 3G, 4G/LTE modules. Equipped with complete Android, Linux and Debian BSPs, this SBC enables customers to easily develop unique application on specific OS.

Specifications

Form Factor		3.5" SBC
Processor System	CPU	Quad-core ARM® Cortex® A53 APQ8016
	Technology	LPDDR3 1066MHz
	Capacity	On-board 1GB / 2GB LPDDR3
	Flash	8GB
Graphics	HDMI	1 HDMI, 1920 x 1080 at 60Hz
	H/W Video Codec	Encode: 30 fps 720p (H.264 Baseline/MPEG-4) 30 fps 1080p (MPEG-4/H.264/VP8/H.263) Decode: 30 fps 1080p (MPEG-4/H.264/H.263/DivX/MPEG2/VC1/Soreson/VP8)
Ethernet	Chipset	Microchip LAN7500
	Speed	1 10/100/1000 Mbps
Connectivity	Wi-Fi	WCN3620 802.11 b/g/n 2.4GHz
	Bluetooth	WCN3620 Bluetooth 4.1
	GNSS	WGR7640
RTC		Yes
WatchDog Timer		Yes
Expansion	SD socket	1 x SD socket
	M.2	1 x M.2 2230 Key.E
	mini PCIe	1 x Full size mini PCIe slot (USB signal only)
	SIM	1 x mini-SIM slot
I/O	SATA	-
	SATA Power	-
	USB	2 x USB 2.0 Type A / 2 x USB 2.0 pin header / 1 x micro USB client
	Audio	1 x line-out, 1 x mic-in via pin header
	SPDIF	-
	Serial Port	1 x 4 wires RS-232/422/485 via D-SUB 9 1 x 4 wires console via pin header (Configurable for general purpose UART or M.2 UART signal)
	SPI	1
	CAN	-
	GPIO	8 x GPIO via D-SUB 9 / 8 x GPIO via pin header (3.3V TTL level)
	I2C	1
	System Bus	-
	Touch	-
	I/R	-
	LED	1 x Power LED, 1 x Wi-Fi&BT LED
	Button	1 x Power Button, 1 x Reset Button
Power	Power Supply Voltage	9-36V
	Power Type	DC-in
	Power Consumption	6 W
Environment	Operational Temperature	0 ~ 60° C
	Operating Humidity	5% ~ 95%
Mechanical	Dimensions (W x D)	102 x 146 mm
Operating System		Android / Yocto Linux / Debian
Certifications		CE/RED/FCC/IC/SRRC/TELEC

Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash	HDMI	LAN	Serial Port	USB Host	SD	Operating Temperature
RSB-4760CQ-QNA1E	Qualcomm APQ8016 Quad Core 1.2GHz	1GB	8GB	1	1	1 x 4 wires RS-232/422/485 1 x 4 wires UART (Console)	4	1	0 ~ 60 °C
RSB-4760CQ-WNA1E	Qualcomm APQ8016 Quad Core 1.2GHz	2GB	8GB	1	1	1 x 4 wires RS-232/422/485 1 x 4 wires UART (Console)	4	1	0 ~ 60 °C

Packing List

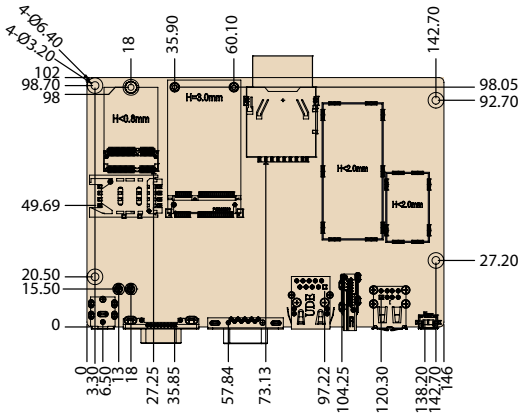
Part Number	Description
RSB-4760	RSB-4760 3.5" SBC

Optional Accessories

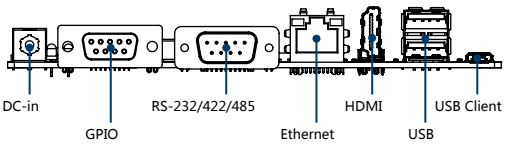
Port Number	Description
96PSA-A36W12R1	Adapter 100-240 36W 12V 3A 9NA0362308
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm
1700008921	Power Cord 3P PSE 183cm
1700026931-01	Debug cable
ROM-ED20-00A1E	Debug adapter board
1750006043	Cable R/P SMA (M) to MHF 1.32 150mm
1750006010	Cable R/P SMA (M) to MHF 1.32 200mm
1750008671-01	Dipole Antenna. 2.4+5G WIFI 2.5/4dBi SMA/M-R L=109mm
1750007622-01	Dipole Antenna. 2.4 WIFI 3.5dBi SMA/M-R L=120mm
1750008717-01	Dipole Antenna. 2.4+5G WIFI 3dBi SMA/M-R L=109mm
1750008772-01	Dipole Antenna. 2.4+5G WIFI 3/4.4dBi SMA/M-R L=136mm
1750006432	Antenna GPS antenna 5000mm
1750007991-01	Antenna GPS+BDS+GONASS 5000mm
1750006264	Antenna Cable SMA(F)/MHF 15cm
1750006009	Antenna Cable SMA(F)/MHF 25cm

Dimensions

Unit: mm



Exrernal I/O



RSB-4680

Rockchip ARM Cortex-A17 RK3288 3.5" SBC

特点

- Rockchip ARM Cortex-A17 RK3288 Quad Core 1.6GHz
- Onboard 2GB DDR3L memory and 8GB eMMC
- HDMI 3840x2160 at 60Hz, VGA 1920x1200 at 60Hz, Dual Channel 18/24/30 bit LVDS
- Support 4K H.264/H.265 Video decoder
- 6 UART, 6 USB2.0, 1 GbE, 8 GPIO, 1 SPI
- M.2 for WIFI/BT support, mini-PCIe for 3G/4G support
- Support Linux and Android

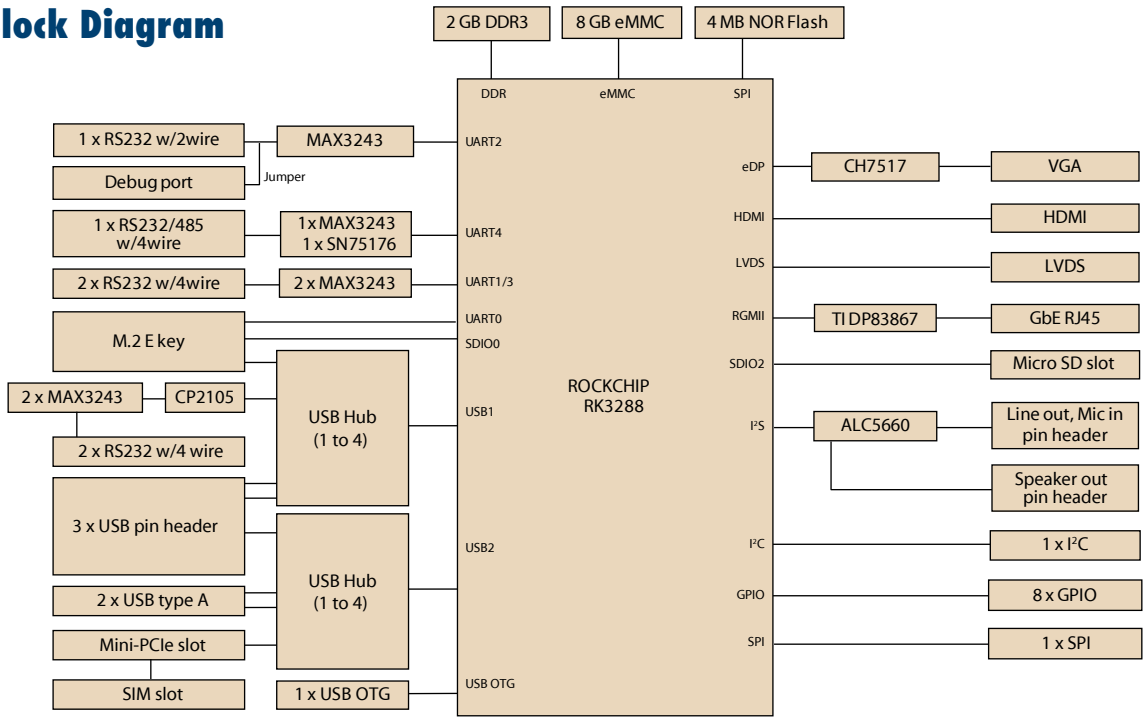
Introduction

RSB-4680 is a RISC 3.5" single board computer (SBC) powered by a high-performance Rockchip ARM Cortex-A17 RK3288 processor which supports 4K display from HDMI. It offers rich interfaces such as 6 USB2.0, 6 UART, 1 VGA, 1 LVDS, 1 GbE and 8 GPIO. RSB-4680 also features Mini-PCIe, M.2, and SIM card slots for integrating Wi-Fi, Bluetooth, and 3G/4G modules. It is an ideal solution for Kiosk, POS, and Vending machine application.

Specifications

Form Factor		3.5" SBC
Processor	CPU	Rockchip ARM Cortex-A17 RK3288 Quad Core up to 1.6GHz
Memory	Technology	DDR3L 1333MHz
	Capacity	On-board DDR3L 2GB
	Flash	8GB of eMMC NAND Flash for OS and Advantech's boot loader 4MB of SPI NOR Flash
Graphics	LVDS	1 x 18/24/30-bit LVDS with 1920 x 1080 for dual channels at 60Hz
	HDMI	1 HDMI, up to 3840 x 2160 at 60 Hz
	VGA	1 VGA, up to 1920 x 1200 at 60Hz
	Graphics Engine	OpenGL ES 1.1/2.0/3.0, OpenCL 1.1, DirectX 11
	H/W Video Codec	Decoder: MPEG-1, MPEG-2, MPEG-4, H.263, H.264, AVS, VC-1, VP8, MVC, HEVC/H.265 decoder, 4k@60FPS Encoder: H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8
Ethernet	Chipset	TI DP83867
	Speed	1 x 10/100/1000 Mbps
WatchDog Timer		Yes
I/O	SATA	-
	SATA Power	-
	USB	1 x USB OTG, 2 x USB Type A, and 3 x USB pin headers
	Audio	1 x Line out, 1 x Mic-in, 1 x Speaker out via a pin header
	SPDIF	-
	SDIO	-
	Serial Port	1 x 4-wire RS-232/485, DB9 1 x 2-wire RS-232/Debug port, pin header selected by jumper 4 x 4-wire RS-232, pin header
	SPI	1
	CAN	-
	GPIO	8 x GPIO via pin header (3.3V TTL level)
	I²C	1
	System Bus	-
	Touch	-
	MIPI CSI	-
	Button	1 x Reset button, 1 x Power button via a pin header
Expansion	Mini PCIe	1 x Mini PCIe slot
	SD Socket	1 x Micro SD slot
	SIM Slot	1 x SIM slot
	M.2 Socket	1 x M.2 2230 Key E slot
Power	Power Supply Voltage	12 V
	Power Type	DC-in
	Power Consumption	-
Environment	Operating Temperature	0 ~ 60 °C/-20 ~ 85 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	146 x 102 mm
Operation System		Linux and Android
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB	System Bus	SD	CAN Bus	Operating Temperature
RSB-4680CQ-XNA1E	Rockchip RK3288 Quad core, 1.6GHz	2 GB	8 GB	1	1	1	1	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port 4 x 4-wire RS-232	–	5 x USB Host 1 x USB OTG	–	1	–	0 ~ 60 °C
RSB-4680WQ-XNA1E	Rockchip RK3288K Quad core, 1.6GHz	2 GB	8 GB	1	1	1	1	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port 4 x 4-wire RS-232	–	5 x USB Host 1 x USB OTG	–	1	–	-20 ~ 85 °C

Packing List

Part Number	Description
RSB-4680	RSB-4680 3.5'' SBC

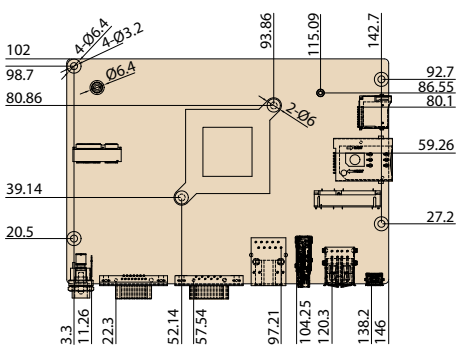
Optional Accessories

Part Number	Description
96PSA-A60W12W6	ADP A/D 100-240V 60W 12V C14 LOCKABLE DC PLUG
1702002605	Power Cord 3P EU 10A 250V 183cm
1702031801	Power Cord 3P UK 10A 250V 183cm
1702002600	Power Cord UL 3P 10A 125V 183cm
1700009652	Power Cord CCC 3P 10A 250V 187cm
1700021565-01	Debug cable
EWM-W167M201E	WIFI BT4.0 Module RTL8723BS SDIO
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm
1750008671-01	Dipole Ant.SMA/M-R 2.4/5G 2.5/4dBi BLK 109mm
968AD00081*	Qucetel EC20CEFA Mini-PCIe 4G module for China
1750006264	Antenna cable SMA(F)/MHF 15cm
1750007990-01	Antenna 4G/LTE full band L=11 cm 50 Ohm
SQF-MSDM1-8G-21C	SQF MICRO SD C10 MLC 8G (-25 ~ 85 °C)
IDK-1107WR-40WVA1E	7" LED PANEL 2.5A/3A 250V 1.83cm400N with 4WR touch, 800 x 480 (G)
1700028571-01	LVDS cable for IDK-1107WR
1700028572-01	LCD blacklight cable for IDK-1107WR

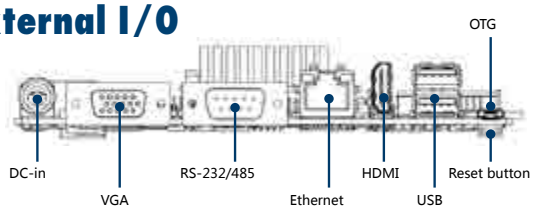
* Please contat us to get suitiable celluar module for your region.

Dimensions

Unit: mm



External I/O



RSB-6410

NXP ARM® Cortex®-A9 i.MX6 Dual/Quad Mini-ITX Motherboard

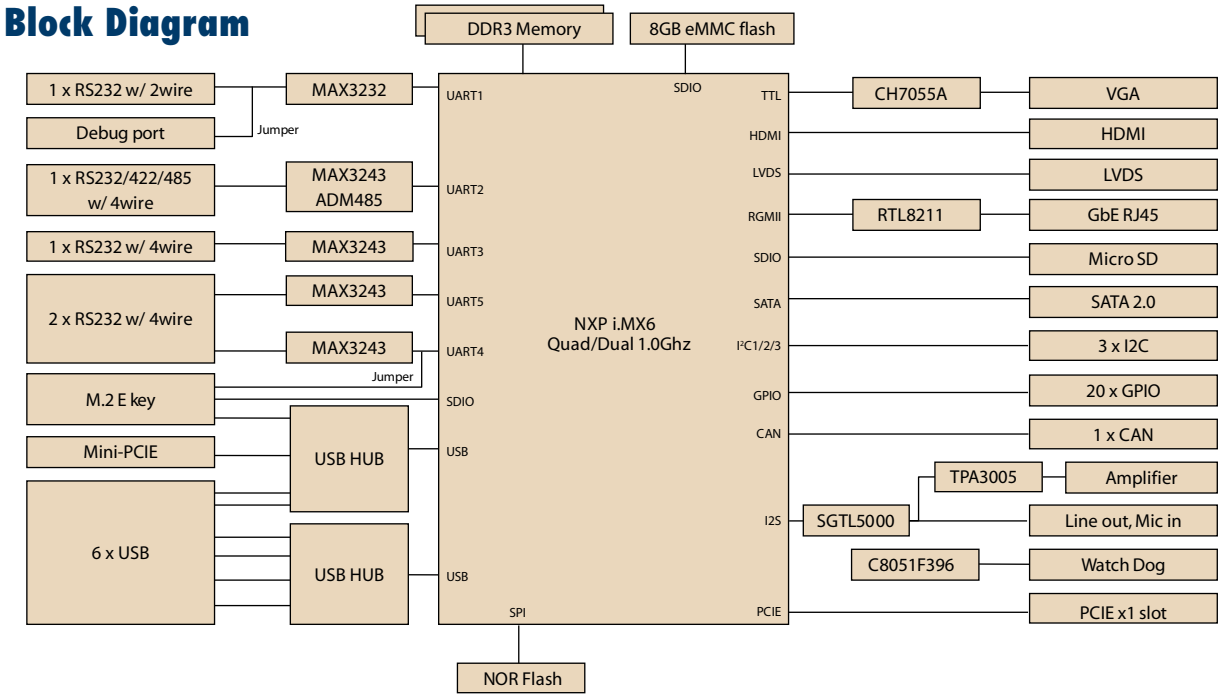
Features

- NXP ARM® Cortex®-A9 i.MX6 Dual/Quad 1GHz high performance processor
- On board DDR3 1066MHz 1GB/2GB memory and 8GB EMMC NAND flash
- Supports Triple Display: VGA/HDMI/LVDS
- Supports 1 x PCIe, 1 x mini-PCIe, 5 x serial ports, 6 x USB, 1 x M.2 socket, 20 x GPIO, 1 x CAN
- Low power consumption, fanless design
- Supports Linux and Android BSP

Specifications

Processor	CPU (40nm)	NXP i.MX 6D	NXP i.MX 6Q
	Core Number	2	4
	Max Speed	1.0 GHz	1.0 GHz
	L2 Cache	1MB	1MB
Expansion Slot	PCI	-	
	Mini-PCIe	1 (USB signal only)	
	PCIe	1	
Memory	Technology	Single channel DDR3 1066MHz SDRAM on board	
	Max. Capacity	1G	2G
	Flash	8GB EMMC NAND Flash for O.S & 4MB SPI NOR Flash for ADV loader	
Graphics	Controller	NXP i.MX6 integrated hardware accelerators	
	VGA	1920 x 1080	
	LVDS	1 x 24bit dual channel LVDS with up to 1920x1080 resolution, 2 x 24bit single channel LVDS with up to 1366x768 resolution (option)	
	HDMI	1920 x 1080	
	Triple Display	Extended Mode: HDMI + LVDS, VGA+HDMI, VGA+LVDS, VGA+HDMI+LVDS (by application) Clone Mode: HDMI + LVDS, VGA+HDMI, VGA+LVDS , 2 single channel LVDS	
Ethernet	Chipset	NXP i.MX6 integrated RMII	
	Speed	1x 10/100/1000 Mbps	
SATA	Max Data Transfer Rate	300 MB/s (SATA 2.0)	
	Channel	1	
EIDE	Mode	None	
	Channel	None	
SSD	CFast CompactFlash	-	
Rear I/O	CRT	1	
	HDMI	1	
	Ethernet	1	
	USB	6 (USB2.0 HOST)	
	Audio	1 Line out, 1 Mic, 1 Amplifier (6W)	
	Serial	2 (1 of RS-232 w/ 4wire,1 of RS-232/422/485 w/ 4wire)	
	KB/MS	-	
	DC jack	1 (2.5 mm)	
Internal Connector	LVDS & Inverter	1/1	
	eDP	-	
	USB	-	
	Serial	3 (2 x 4 wire RS232,1 x 2 wire RS232/debug port by jumper), only com5 supply 5V/12V	
	IDE	None	
	I²C	3	
	CAN	1	
	SATA	1 (SATA 2.0)	
	SATA PWR Connector	1	
	SD	1	
	Parallel	None	
	GPIO	18	
Watchdog Timer	Output	System reset	
	Interval	time out : 0.1~6553.5s, power on/off 4s	
Power	Power Type	Single voltage 12V DC input; 1 x External DC jack; 1 x Internal 4-pin (2x2) power connector; Supports AT/ATX mode	
	Typical Power Consumption	8W (system burning)	
Operating System	Android	V 4.4.2 , Kernel V3.0.35	
	Linux	Yocto1.7, Kernel V3.14.28	
Environment		Operating	Non-Operating
	Temperature	0 ~ 60 °C (32 ~ 140 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")	

Block Diagram



Ordering Information

Part No.	CPU	Memory	eMMC	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB	SD	CAN bus	Operating Temperature
RSB-6410CD-PNA1E	i.MX6D	1G	8G	1	1	1	1	4xRS232, 1xRS422/485/232	1	6	1	1	0 ~ 60 °C
RSB-6410CQ-VNA1E	i.MX6Q	2G	8G	1	1	1	1	4xRS232, 1xRS422/485/232	1	6	1	1	0 ~ 60 °C

Packing List

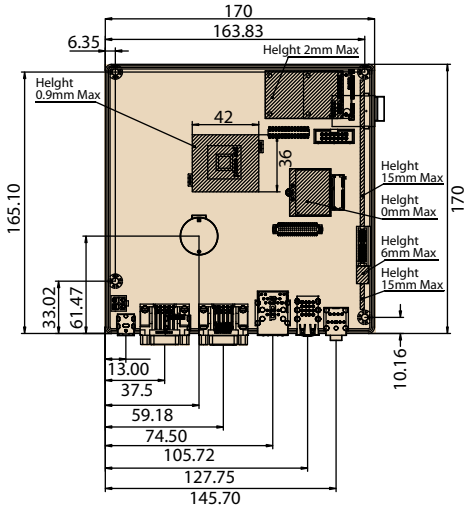
Part Number	Description	Quantity
9696R20001E/11E	RSB-6410 mother board	1
1700021565-11	Debug cable	1
1700025732-01	RS232 1-to-2 cable	1
1960074075T000	IO Port bracket	1

Optional Accessories

Port Number	Description	Quantity
96PSA-A36W12R1	A/D 100 ~ 240 V, 36 W, 12 V	1
1700001524	Power Cord 3P UL 10A 125 V 180 cm	1
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83cm	1
170203183C	Power Cord 3P Europe 183cm	1
1700026610-01	GPIO cable,A cable D-SUB 9P(F)/2*11P-2.0 20CM	1
1700023575-01	Can cable, A cable D-SUB 9P(M)/1*4P-2.0 20cm	1
IDK-1107WR-40WVA1E	7" LED PANEL 2.5A/3A 250V 1.83cm400N with 4WR touch, 800 x 480 (G)	1
1700025779-01	LVDS cable for IDK-1107WR	1
1700025767-01	LCD blacklight cable for IDK-1107WR	1
SQF-ISDS1-4G-82C	SQFlash SD card 4G	1
Y5AGF16002	Wifi BT module AW-CB178NF-S	1
1750002842	Wireless Antenna R-AN2450-5701RS R/P SM	1
1750008500-01	ANT.SMA/F-R-BH IPEX/P NGFF L150mm	1
9680017201	Quectel 3G module UC20-G	1
1750008498-01	ANT.SMA/F-BH IPEX/P L200mm	1
1750008430-01	3G Dipole Antenna SMA(M) 2dBi 109mm	1
PCIE-1602C	2-Port RS232/422/485 PCIE card	1
96NIC-1G-PE-IN	INTEL NIC 10/100/1000M PCIEx1 DESKTOP(G) 82574	1

Dimensions

Unit: mm



EPC-R4760

基于高通 ARM Cortex-A53 APQ-8016的精简型工控机

特点

- 高通 ARM® Cortex®-A53 APQ8016 四核，最高可达 1.2 GH
- 板载1GB / 2GB LPDDR3内存和8GB eMMC
- 1 HDMI, 1 RS-232/422/485, 1 GbE, 4 USB 2.0, 8 GPIO
- 高度集成板载无线连接 — Wi-Fi, BT, and GNSS
- 连接扩展能力-M.2，mini-PCIe
- 宽电压范围直流电源输入
- 支持 Android, Linux 和自由操作系统

产品介绍

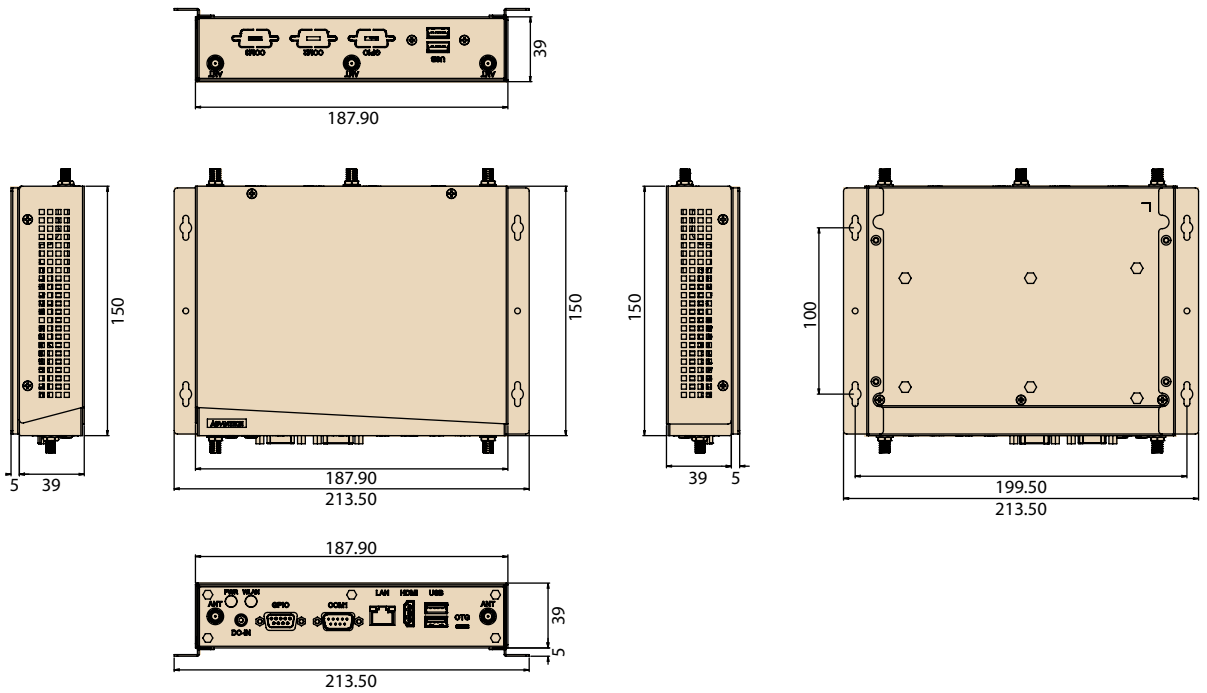
EPC-R4760是一款基于高通ARM Cortex-A53 APQ8016 处理器的箱式电脑，支持全高清设备并且在板上集成了无线解决方案——Wi-Fi、蓝牙和GPS。RSB-4760还为扩展连接能力设有mini PCIe，M.2和SIM卡槽，如3G、4G/LTE模块。因配备完整的Android、Linux和Win0物联网核心的BSP，这款箱式电脑使得客户可轻松地在特定的操作系统开发独有的应用。

规格

规格		ARM-based Box Computer
处理器系统	CPU	Quad-core ARM® Cortex® A53 APQ8016
	Technology	LPDDR3 1066MHz
	Capacity	On-board 1GB / 2GB LPDDR3
	Flash	8GB
图形	HDMI	1 HDMI, 1920 x 1080 at 60Hz
	H/W Video Codec	Encode: 30 fps 720p (H.264 Baseline/MPEG-4) 30 fps 1080p (MPEG-4/H.264/VP8/H.263) Decode: 30 fps 1080p (MPEG-4/H.264/H.263/DivX/MPEG2/VC1/Soreson/VP8)
以太网	Chipset	Microchip LAN7500
	Speed	1 10/100/1000 Mbps
连接	Wi-Fi	WCN3620 802.11 b/g/n 2.4GHz
	Bluetooth	WCN3620 Bluetooth 4.1
	GNSS	WGR7640
RTC		Yes
看门狗计时器		Yes
扩展	SD socket	1 x SD socket
	M.2	1 x M.2 2230 Key.E
	mini PCIe	1 x Full size mini PCIe slot (USB signal only)
	SIM	1 x mini-SIM slot
I/O	SATA	-
	SATA Power	-
	USB	4 x USB 2.0 Type A / 1 micro USB client
	Audio	-
	SPDIF	-
	Serial Port	1 x 4 wires RS-232/422/485 via D-SUB 9
	SPI	-
	CAN	-
	GPIO	8 x GPIO via D-SUB 9 (3.3V TTL level)
	I²C	-
	System Bus	-
	Touch	-
	I/R	-
	LED	1 x Power LED, 1 x Wi-Fi&BT LED
	Button	-
电源	Power Supply Voltage	9-36V
	Power Type	DC-in
	Power Consumption	6.2W
环境	Operational Temperature	0 ~ 40° C
	Operating Humidity	5% ~ 95%
物理特性	Dimensions (W x D)	188 x 150 x 39 mm
开放系统		Android / Yocto Linux / Debian
认证		CE/RED/FCC/IC/SRRC/TELEC

结构图

Unit: mm



订购信息

料号	CPU	内存	Flash	HDMI	LAN	Serial Port	USB Host	SD	Operating Temperature
EPC-R4760CQ-QNA1E	Qualcomm APQ8016 Quad Core 1.2GHz	1GB	8GB	1	1	1 x 4 wires RS-232/422/485	4	1	0 ~ 40 °C
EPC-R4760CQ-WNA1E	Qualcomm APQ8016 Quad Core 1.2GHz	2GB	8GB	1	1	1 x 4 wires RS-232/422/485	4	1	0 ~ 40 °C

装箱单

料号	描述
EPC-R4760	EPC-R4760 Box computer

可选配件

料号	描述
96PSA-A36W12R1	Adapter 100-240 36W 12V 3A 9NA0362308
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm
1700026931-01	Debug cable
ROM-ED20-00A1E	Debug adapter board
1700008921	Power Cord 3P PSE 183cm

EPC-R4680

基于Rockchip RK3288 Cortex-A17 ARM 平台的精简型工控机

特点

- Rockchip ARM Cortex-A17 RK3288 Quad core，最高可达1.6GHz
- 搭载 2GB DDR3L 内存及 8GB eMMC
- 支持 4K H.264/H.265 视频解码, OpenVG1.1, OpenGL,ES1.1/2.0/3.0, OpenCL1.1, DrectX11.
- 支持 HDMI 3840 x 2160 at 60Hz, VGA 1920 x 1200 at 60Hz
- 6 UART, 5 USB2.0, 1 USB OTG, 1GbE, 8GPIO
- 支持适用于WIFI/BT模块的M.2插槽，4G 模块的Mini-PCIe 插槽
- 支持 Linux 及 Android

产品介绍

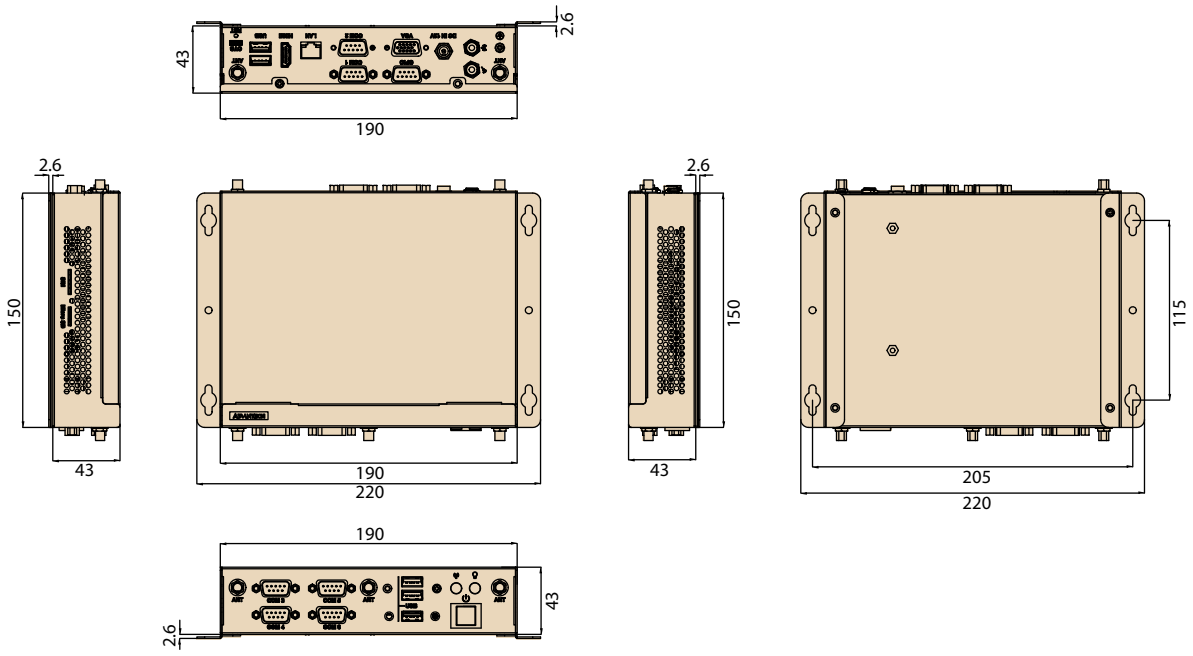
EPC-R4680是基于ARM平台的精简型工控机，搭载Rockchip ARM Cortex-A17 RK3288 Quad core高性能处理器，支持4K 显示及 4Kx2K多格式HDMI视频解码。此外，配有M.2, Mini-PCIe 及支持WIFI的SIM卡卡槽、支持BT及4G连接，6 USB 2.0, 6UART, 1 GbE 及 8 GPIO的丰富接口，是KIOSK、贩卖机及数字标牌应用的理想解决方案。

Specifications

规格		ARM-based Box Computer
处理器	CPU	Rockchip ARM® Cortex® A17 RK3288 Quad-core, up to 1.6 GHz
内存	Technology	DDR3L 1333MHz
	Capacity	On-board 2GB DDR3L
	Flash	8GB eMMC NAND Flash for OS and Advantech boot loader 4MB SPI NOR Flash
图形	HDMI	1 HDMI, 3840 x 2160 at 60Hz
	VGA	1 VGA, up to 1920 x 1200 at 60Hz
	H/W Video Codec	Encode: H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8 Decode: MPEG-1, MPEG-2, MPEG-4,H.263, H.264, AVS, VC-1, VP8, MVC, HEVC/H.265 decoder, 4k@60FPS
以太网	Chipset	TI DP83867
	Speed	1 10/100/1000 Mbps
RTC		Yes
看门狗计时器		Yes
扩展	SD socket	1 x Micro SD slot
	M.2	1 x M.2 2230 Key.E
	mini PCIe	1 x Full size mini PCIe slot (USB signal only)
	SIM	1 x SIM slot
I/O	SATA	-
	SATA Power	-
	USB	5 x USB Type A, 1 x USB OTG
	Audio	1 x line-out, 1 x mic-in
	SPDIF	-
	Serial Port	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port, pin header selected by jumper 4 x 4-wire RS-232
	SPI	1 x SPI by pin header
	CAN	-
	GPIO	8 x GPIO via D-SUB 9 (3.3V TTL level)
	I²C	1 x I²C by pin header
	System Bus	-
	Touch	-
	I/R	-
	LED	1 x Power LED, 1 x 4G LED
	Button	1 x Power button, 1 x Reset button
电源	Power Supply Voltage	12V
	Power Type	DC-in
	Power Consumption	TBD
环境	Operational Temperature	0 ~ 55 °C/-20 ~ 70 °C
	Operating Humidity	5% ~ 95%
物理特性	Dimensions (W x D)	190 x 150 x 43 mm
开放系统		Android/Linux
认证		CCC/CE/FCC Class B

Dimensions

Unit: mm



订购信息

料号	CPU	内存	Flash	HDMI	LAN	Serial Port	USB Host	SD	Operating Temperature
EPC-R4680CQ-XAA1E	Rockchip RK3288 Quad Core 1.6GHz	2GB	8GB	1	1	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port 4 x 4-wire RS-232	5 x USB Host 1 x USB OTG	1	0 ~ 55 °C
EPC-R4680WQ-XAA1E	Rockchip RK3288K Quad Core 1.6GHz	2GB	8GB	1	1	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port 4 x 4-wire RS-232	5 x USB Host 1 x USB OTG	1	-20 ~ 70 °C

装箱单

料号	描述
EPC-R4680	EPC-R4680 Box computer

可选配件

料号	描述
96PSA-A36W12W7	ADP A/D 100-240V 36W 12V WO/PFC
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700019146	Power Cord CCC 3P 10A 250V 183cm
EWM-W167M201E	802.11b/g/n (1R1T)+BT4.0 WLAN and BT combo module
1750008800-01	Antenna Cable R/P SMA (M) to MHF4, 100mm
1750008671-01	Dipole Ant.SMA/M-R 2.4/5G 2.5/4dBi BLK 109mm
968AD00081*	Qucetel EC20CEFA Mini-PCIe 4G module for China
1750006264	Antenna cable SMA(F)/MHF 15cm
1750007990-01	Antenna 4G/LTE full band L=11 cm 50 Ohm
SQF-MSDM1-8G-21C	SQF MICRO SD C10 MLC 8G (-25 ~ 85 °C)

* Please contat us to get suitiable celluar module for your region.

EPC-R6410

基于NXP ARM Cortex-A9 i.MX6 精简型工控机

特点

- NXP ARM Cortex-A9 i.MX6双核/四核高性能处理器
- 板载1066MHz 1GB/2GB DDR3内存和8GB eMMC闪存
- 支持双显示器：VGA/HDMI
- 支持1 x mini-PCIe, 4 x serial ports, 6 x USB, 1 x M.2 插槽, 8 x GPIO,1 x CAN
- 低功耗无风扇设计
- 支持Linux和Android BSP

产品介绍

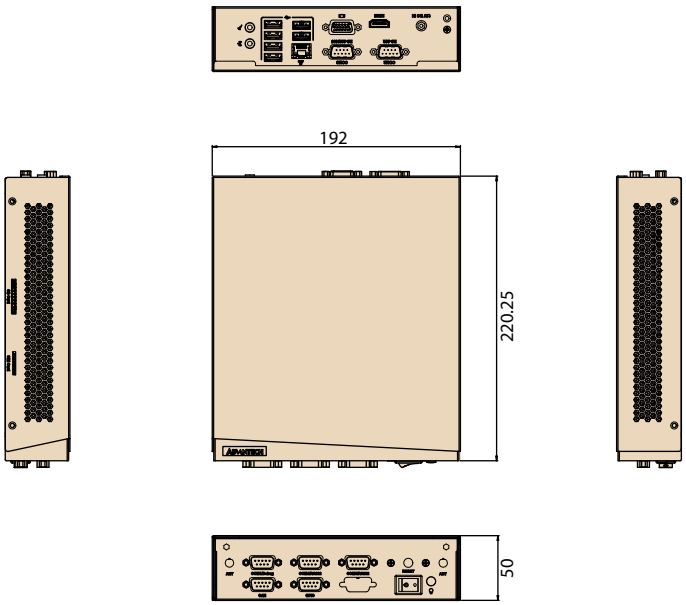
EPC-R6410是基于RISC且集成了NXP i.MX6D/Q Cortex-A9 1.0GHz高性能处理器的箱式电脑。它是为高性能、丰富的I/O接口但是低功耗要求的应用设计。支持双显示器，HDMI和VGA可高达1080P，1个千兆以太网，6个USB 2.0和4个serial接口，同时支持专为4G/3G 的 mini-PCIE和支持WiFi/蓝牙的M.2。通过挂墙支架、无风扇和防尘设计，你可以轻松将其安装在恶劣的环境中。

规格

规格		Embedded Box Computer
处理器系统	CPU	NXP ARM Cortex-A9 i.MX6 Dual/Quad 1GHz processor
	Capacity	1GB/2GB of onboard DDR3 at 1066 MHz
	Flash	8 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for ADV loader
以太网	Transceiver	RTL 8211
	Speed	1 x 10/100/1000 Mbps
看门狗计时器		C8051 (time out: 0.1~6553.5s, power on/off 4s)
I/O	USB	6 x USB2.0 host
	Serial	4 (3 of RS-232 w/ 4wire,1 of RS-232/422/485 w/ 4wire)
	CAN	1
	GPIO	8
	Button	1 x Reset button, 1 x Power button
扩展	SD Socket	1 x SD slot
	Mini-PCIe	1 (USB signal only)
	M.2	1 (E-Key)
电源	Power Supply Voltage	12 V DC-in
	Power Type	DC-Jack
	Power Consumption	6W@Max Mode
环境	Operational Temperature	0 ~ 55 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
物理特性	Dimensions (W x D x H)	200 x 230 x 50 mm
开放操作系统	Android	Android4.4.2@ Kernel V3.0.35/Android6.0@kernel V4.1.15
	Linux	Yocto1.7, Kernel V3.14.28/Yocto2.1@Kernel V4.1.15
认证		CE/FCC/CCC Class B

结构图

Unit: mm



订购信息

料号	CPU	内存	eMMC	SD	CAN	UART	GPIO	VGA	HDMI	USB Host	LAN	Operating Temperature
EPC-R6410CD-PAA1E	NXP i.MX6D	1GB	8GB	1	1	4	8	1	1	6	1	0 ~ 55 °C
EPC-R6410CQ-VAA1E	NXP i.MX6Q	2GB	8GB	1	1	4	8	1	1	6	1	0 ~ 55 °C

装箱单

料号	描述
96966410000/10	NXP i.MX6D/Q 1GHz computing board
1960074545N001	Wall mount

可选配件

料号	描述
96PSA-A36W12R1	ADP A/D 100-240V 36W 12V
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
SQF-ISDS1-4G-82C	SQF SDHC C10 SLC 4G, 1CH (0 ~ 70 °C)
SQF-ISDS1-8G-82C	SQF SDHC C10 SLC 8G, 1CH (0 ~ 70 °C)
SQF-ISDS1-8G-82E	SQF SDHC C10 SLC 8G, 1CH (-40 ~ 85 °C)
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700019146	Power Cord CCC 3P 10A 250V 183cm
1700001524	Power cord 3P UL 10A 125 V 180 cm
968AD00018	Wifi BT module AW-NB136NF
1750002842	Wireless Antenna R-AN2450-5701RS R/P SM
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm
968AD00081	Qucetel EC20CEFA Mini-PCIe 4G module
1750006264	Antenna cable SMA(F)/MHF 15cm
1750007990-01	Antenna 4G/LTE full band L=11 cm 50 Ohm

前视图

后视图

EBC-GF06 A1

NXP ARM Cortex-A9 i.MX6 RISC Multiple I/Os system

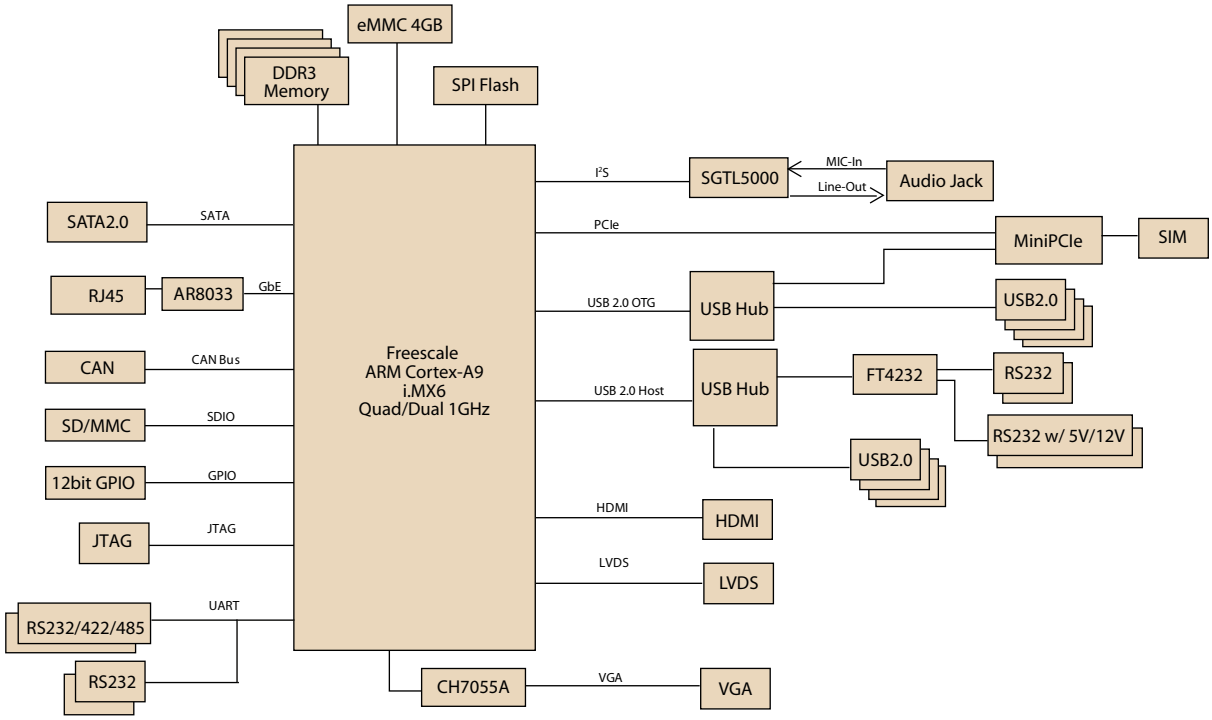
Features

- NXP ARM Cortex-A9 i.MX6 Quad 1GHz high performance processor
- On board DDR3 1066MHz 2GB memory and 4GB EMMC NAND flash
- Supports Dual Display: VGA/HDMI
- Supports 1 x mini-PCIe, 8 x serial ports, 8 x USB, 1 x Lan
- Low power consumption, fanless design
- Supports Android BSP

Specifications

Processor	CPU	NXP ARM Cortex-A9 i.MX6 Quad 1GHz processor
	Max. Speed	1GHz
Memory	Technology	DDR3 1066 MHz
	Max. Capacity	On-board DDR3 2GB
	Flash	4GB eMMC NAND Flash for O.S. and 4MB SPI NOR Flash for Advantech boot loader
Graphics	HDMI	Up to 1920 x 1080
	VGA	Up to 1920 x 1080
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	LVDS	Up to 24-bits dual channel 1920 x 1080
	HW Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 1000/100/10Mbps
RTC	RTC	Yes
Watchdog Timer		256-level timer interval, from 0 ~ 128 sec
Storage	SD/MMC	1
	SATA 2.0	1 (300MB/s per port)
Expansion	Mini PCIe	1 Full-size with USB 2.0, PCIex1, and SIM holder
Rear I/O Connector	VGA	1
	HDMI	1
	RJ-45	1
	USB 2.0	8
	Serial	2 x RS-232 with 5V/12V power 2 x RS-232/422/485 with jumper selection 4 x RS-232
	Audio Jack	1 (Line-out, Mic-in)
	SD/MMC	1
	DC Jack	1
	LED	1 Power LED
	Power Button	1
Internal Connector	Serial	-
	LVDS	1
	LVDS Inverter	1
	GPIO	1 for 12-bit GPIO
	CANBus	1
Power	Power Requirement	+12V (8A)
	Power Type	DC-in
	Power Connector	1 x 12V DC-in, 1 x 4-pin ATX 12V
Environment	Operation Temperature	0 ~ 50° C (32 ~ 130° F)
	Non-Operation Temperature	-40 ~ 85° C (-40 ~ 185° F)
	Operation Humidity	0% ~ 90% relative humidity, non-condensing
Motherboard Physical Characteristics	Dimensions	170 x 170 mm (6.69" x 6.69")
	Weight	0.3 kg
System Physical Characteristics	Dimensions	297 x 200 x 49 mm (11.7" x 7.87" x 1.9")
	Weight	1.8 kg

Board Diagram



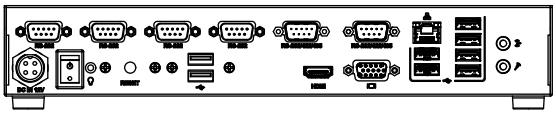
Ordering Information

Part Number	System	CPU	DDR3	VGA	HDMI	LVDS	CAN	SATA	GPIO	LAN	USB	Serial	Wifi Module
EBC-GF06-00A1E	Yes	Quad	2GB	1	1	0	0	0	0	1	8	8	N/A

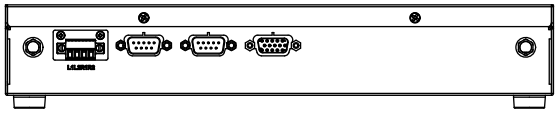
Optional Accessories

Part Number	Description
9680017201	Quectel 3G module UC20-G
SQF-ISDS1-4G-82C	SQFlash SD card 4G

Front View

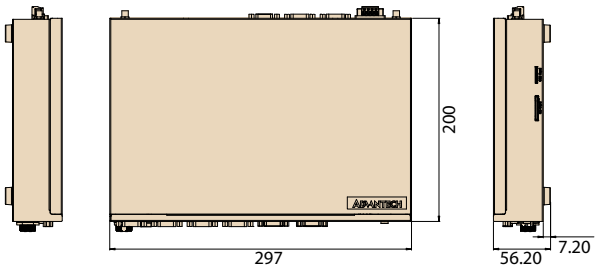


Rear View



Dimensions

Unit: mm



EBC-GF06 A2

NXP ARM Cortex-A9 i.MX6 RISC Multiple IOs system

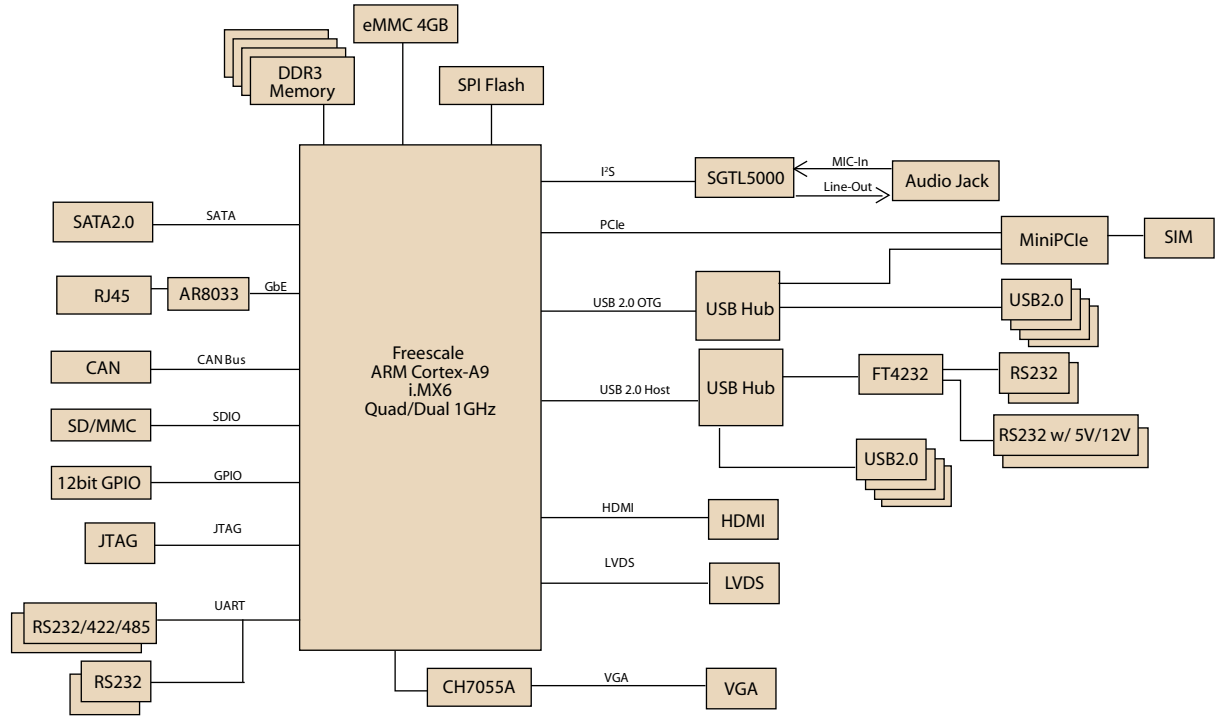
Features

- NXP ARM Cortex-A9 i.MX6 Quad/Dual 1GHz high performance processor with on board 2GB DDR3 memory
- Supports dual independent display configuration by multiple display interface: VGA, HDMI
- Diversified I/O interface in the rear side, 6 USB2.0, 6 Serial, 1 VGA and 1 HDMI
- 2 x 4wires RS232/RS485/RS422 DB9
- 4 x 2wires RS232 DB9
- Supports 1 Mini PCIe slot for 3G/wifi module with pluggable SIM socket and antenna mounting hole

Specifications

Processor	CPU	NXP ARM Cortex-A9 i.MX6 Quad/Dual 1GHz processor
	Max. Speed	1GHz
Memory	Technology	DDR3 1066 MHz
	Max. Capacity	On-board DDR3 2GB
	Flash	8GB eMMC NAND Flash for O.S. and 4MB SPI NOR Flash for Advantech boot loader
Graphics	HDMI	Up to 1920 x 1080
	VGA	Up to 1920 x 1080
	Graphics Engine	2 IPUs. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	HW Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 x 1000/100/10Mbps
RTC	RTC	Yes
Watchdog Timer		256-level timer interval, from 0 ~ 128 sec
Storage	SD/MMC	1
Expansion	Mini PCIe	1 Full-size with USB 2.0, PCIex1, and SIM holder
Rear I/O Connector	VGA	1
	HDMI	1
	RJ-45	1
	USB 2.0	6
	Serial	2 x 4wires RS232/RS485/RS422 DB9 4 x 2wires RS232 DB9
	Audio Jack	1 (Line-out, Mic-in)
	SD/MMC	1
Power	Power Requirement	+12V (8A)
	Power Type	DC-in
	Power Connector	1 x 12V DC-in, 1 x 4-pin ATX 12V
Environment	Operation Temperature	-5 ~ 55° C (23 ~ 131° F)
	Non-Operation Temperature	-20 ~ 70° C (-4 ~ 158° F)
	Operation Humidity	5% ~ 95%, non-condensing
System Physical Characteristics	Dimensions	200mm x 230mm x 50 mm w/ bracket 200mm x 190mm x 50mm w/o bracket

Board Diagram

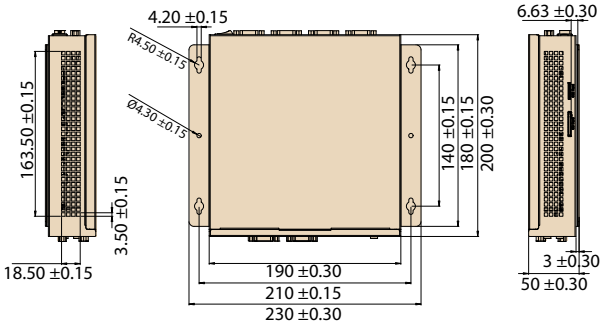


Ordering Information

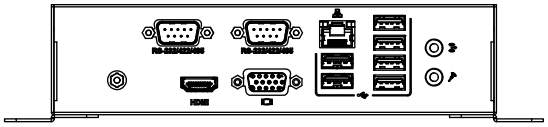
Part Number	System	CPU	DDR3	VGA	HDMI	LAN	USB	Serial	Wifi Module
EBC-GF06-00A2E	Yes	Quad	2GB	1	1	1	6	6	N/A

Dimensions

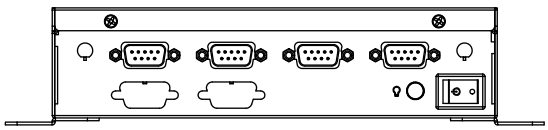
Unit: mm



Front View



Rear View



UBC-220

NXP ARM® Cortex®-A9 i.MX6 2.5" IoT Gateway

特点

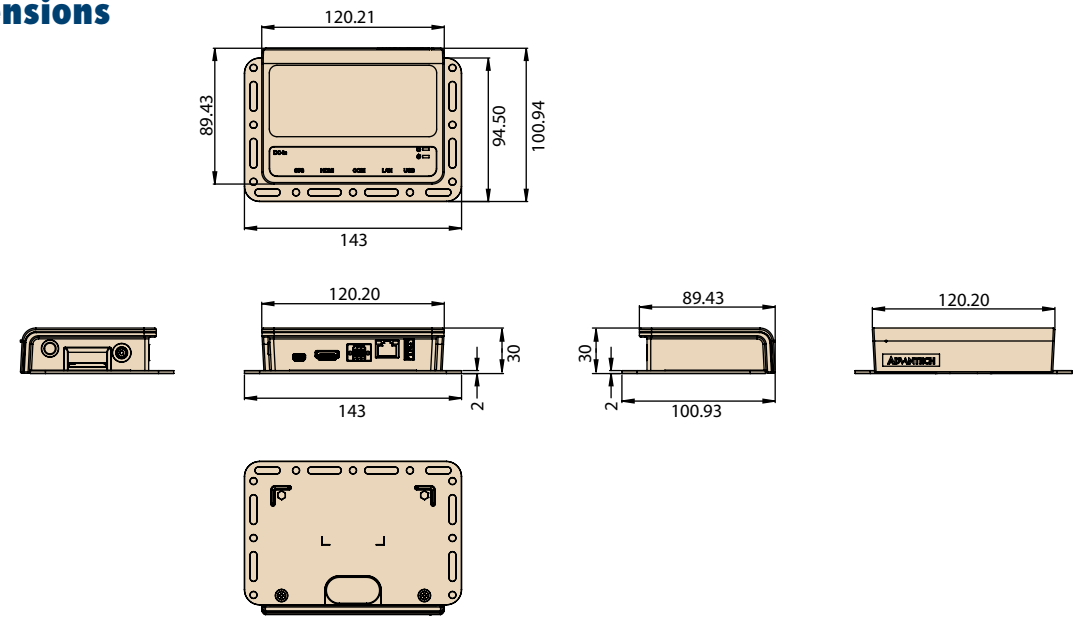
- NXP ARM® Cortex®-A9 i.MX6 Dual Lite 1 GHz processor
- Onboard DDR3 1GB, 800MH
- 4 GB eMMC Flash Memory
- Dual display HDMI 1920x1080P and single channel 18/24 bit LVDS
- Rich I/O with 1 4-wire RS-232, 1 USB 2.0, 1 USB OTG
- Dual mini-PCIe slots for Wi-Fi/Cellular module support
- Low power consumption, fanless design
- Supports wall mounting, 10x10 VESA and DIN rails

Specifications

Form Factor		2.5"Box computer
Processor System	CPU	NXP ARM® Cortex®-A9 i.MX6 dual-core lite 1 GHz processor
Memory	Technology	DDR3 800 MHz
	Capacity	1 GB of onboard DDR3
	Flash	4 GB of eMMC Flash for OS and 4 MB of NOR Flash for Advantech's boot loader
Graphics	HDMI	HDMI with 1920 x 1080 resolution
	LVDS	Single-channel 18/24-bit LVDS
	Graphics Engine	1 x IPU. OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1
	H/W Video Codec	Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP
Ethernet	Chipset	NXP i.MX6 integrated RGMII
	Speed	1 10/100/1000 Mbps
Watchdog Timer	Watchdog Timer	From 1~6553s, power on/off 4s
I/O	USB	1 x USB 2.0 Type A
	USB OTG	1 x USB 2.0 OTG
	UART	1 x 4-wire RS-232
Indicator	LED	1 x Green LED for system power 1 x Green LED (user defined)
Expansion	Full-Size Mini PCIe	1
	Half-Size Mini PCIe	1
	SD Socket	1
	SIM	1
	Antenna Socket	1
Power	Power Supply Voltage	12 V_{DC}
	Power Type	DC-in
	Power Consumption	4.4 Watts (max. load)
Environment	Operating Temperature	0 ~ 60 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions	142 x 101 x 30 mm
	Mounting	Wall mount, DIN rail, VESA mount
	Weight	210 g
Operating System	Linux	V3.0.35
	Android	V4.3
Certifications		CE/FCC Class B

Dimensions

Unit: mm



Ordering Information

Part Number	CPU	Memory	Flash	HDMI	VGA	LVDS	LAN	Serial Port	USB Host	SD	Software	Operating Temperature
UBC-220DL-MDA1E	NXP i.MX6 dual-core lite, 1 GHz	1 GB	4 GB	1	-	1	1	1 x 4-wire RS-232	1 USB 2.0 1 OTG	1	Linux Android	0 ~ 60 °C

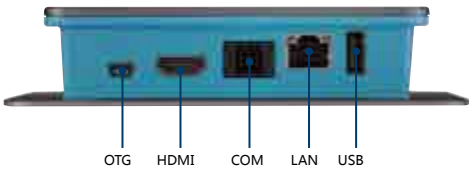
Packing List

Part Number	Description
1652006794-01	6-pin terminal block

Optional Accessories

Part Number	Description
96PSA-A36W12R1	Power Adapter 100-240V 36W 12V
1700001524	Power cord 3P UL 180cm
170203183C	Power cord 3P EU 183cm
170203180A	Power cord 3P UK 183cm
1700008921	Power Cord 3P PSE 183cm
EWM-W142F01E	802.11 b/g/n, AR9287, 2T2R, full-size mini PCIe
EWM-C106FT02E	HSPA/WCDMA/GPRS cellular module
1750006043	Cable R/P SMA (M) to MHF 1.32 150 mm (Wi-Fi cable)
1750000318	EMI antenna 2DBI 2.4 GHz SMA CONN for ARK-3384 (Wi-Fi antenna)
1750006264	Antenna SMA(F)/MHF 15 cm SMALFN8-3150A-00X00R (3G cable)
1750005865	Antenna, 10.9 cm, 50 ohm, AN8921F-5701SM (3G antenna)
1700021565-01	Debug cable
SQF-ISDS1-2G-86E	SQFlash SD card SLC 2G (-40 ~ 85 °C)

External I/O



UBC-330

TI Sitara™ AM3352 Cortex®-A8 RISC Computing Box

特点

- TI Sitara™ AM3352 Cortex®-A8 1.0 GHz processor
- 512 MB of DDR3-800 and 4 GB of eMMC NAND Flash onboard
- 4 GPI and 4 GPO ports (with ESD and isolation protection)
- 5x serial port w/ESD protection (Contact 4KV / Air 8KV)
- 2 Gigabit Ethernet ports
- Supports Linux BSP
- 0 ~ 55 °C operating temperature
- Equipped with hardware watchdog time for system protection

Introduction

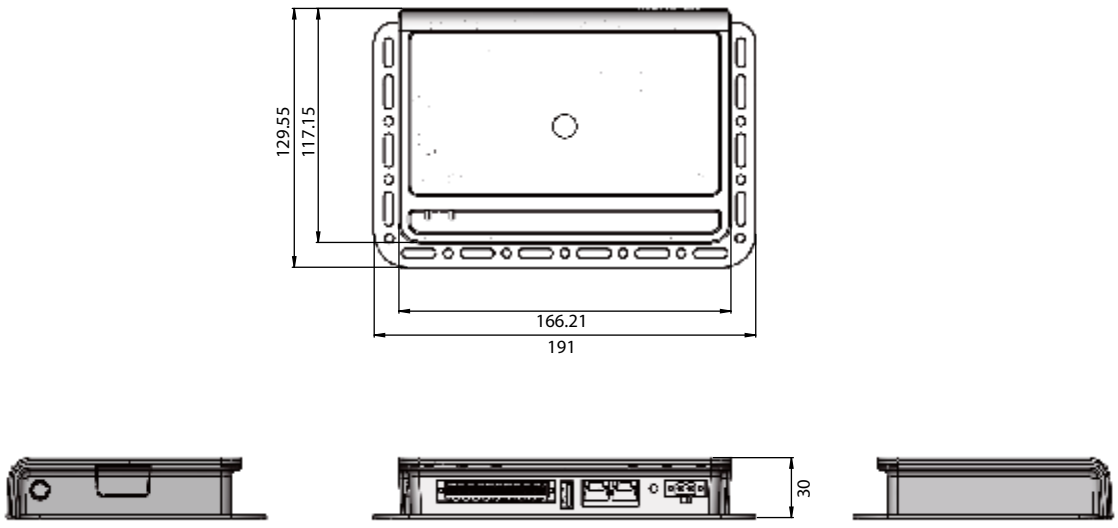
UBC-330 is a RISC computing box powered by a TI Sitara™ AM3352 Cortex®-A8 processor and equipped with 2 Gigabit Ethernet, 5 serial, 4 GPI, and 4 GPO ports. For industrial applications, the serial and GPIO ports feature rugged ESD and isolation protection to prevent system damage from power fluctuations. UBC-330 also supports multiple power input voltages and a wide operating temperature, making it the ideal solution for automation control in smart grid, industrial, and machinery automation applications.

Specifications

Form Factor		Box computer	
Processor System	CPU	TI Sitara™ AM3352 Cortex®-A8 1.0 GHz processor	
	Capacity	512 MB of onboard DDR3 at 800 MHz	
	Flash	4 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for ADV loader	
Ethernet	Transceiver	RTL 8211	
	Speed	2 x 10/100/1000 Mbps	
WatchDog Timer		MSP430G2202 (timeout: 1 ~ 6553s, default 60s/power on/off 1s)	
I/O	USB	1 x USB2.0 host	
	Serial Port	5 (1x 4 wires RS-232/422/485, 4x 2 wires RS-232) The 5 serial port w/ ESD protection (Contact 4KV/ Air 8KV)	
	CAN	CAN bus version 2.0 A and B	
	GPIO	4 GPI and 4 GPO ports (with optional ESD and isolation protection) **GPI:** ESD protection: Contact 4KV/ Air 8KV Isolation: 0 ~ 50V_{DC} input and 10KHz speed	**GPO:** ESD protection: Contact 4KV/ Air 8KV Isolation: 5 ~ 40V_{DC} output and 10KHz speed (200mA max/channel sink current)
	I^2C	1	
	Button	1 x Reset button	
Expansion	SD Socket	1 x SD slot	
Power	Power Supply Voltage	+12/19/24 V DC-in	
	Power Type	2-pole lockable DC-in	
	Power Consumption	3.3 Watts (maximum)	
Environment	Operational Temperature	0 ~ 55 °C	
	Operating Humidity	5 ~ 95% relative humidity, non-condensing	
Mechanical	Dimensions (W x D x H)	117 x 166 x 30 mm	
Operating System		Linux	
Certifications		CE FCC/CCC Class B	

Dimensions

Unit: mm



Ordering Information

Part Number	CPU	Memory	eMMC	SD	CAN	UART	GPIO	Isolation	ESD	USB Host	LAN	Operating Temperature
UBC-330NS-JLA1E	TI AM3352 1.0 GHz	512 MB	4 GB	1	1	5	8	Serial: No GPIO: Yes	Serial: Yes GPIO: Yes	1	2	0 ~ 55 °C

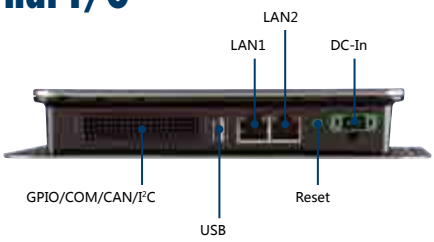
Packing List

Part Number	Description
UBC-330NS-JLA1E	UBC-330 AM3352 1 GHz 512 MB computing box
1652006830-01	20x2P 2.54mm 180D 0156-1A40

Optional Accessories

Part Number	Description
96PSA-A36W12R1	ADP A/D 100-240V 36W 12V
1700023307-01	DC jack/plug-in cable 1*2P-5.0 10 cm RSB-4220
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
SQF-ISDS1-4G-82C	SQF SD C6 SLC 4G, 1CH
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm

External I/O



EPC-R3220

TI Sitara™ AM3352 Cortex®-A8
基于ARM物联网网关

特点

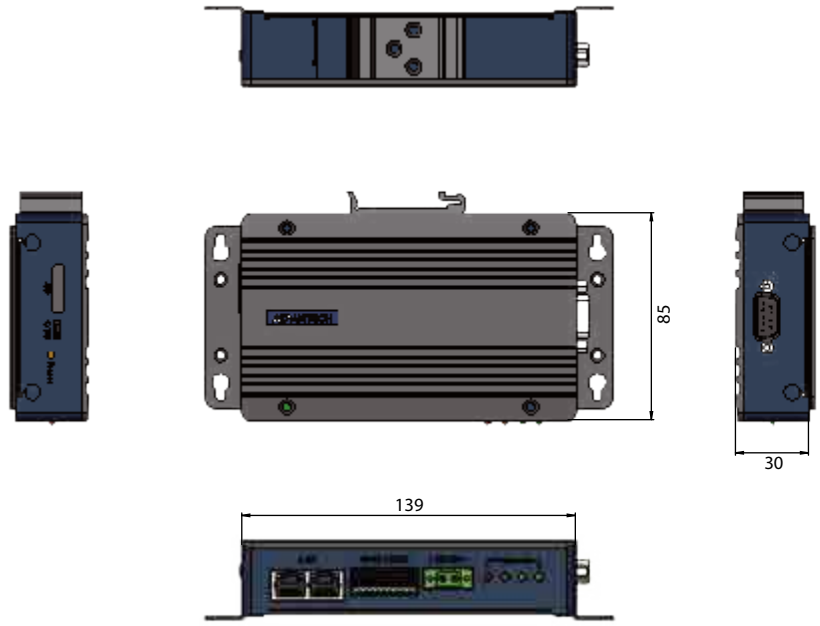
- TI Sitara™ AM3352 Cortex®-A8 800mhz处理器
- 1GB的DDR3-800和8gb的eMMC NAND存储载板
- 2 千兆以太网端口
- 2 RS2323/485 1 USB OTG 6 GPIO
- 提供WiFi/BT/LTE 解决方案
- 支持Linux BSP
- 工作温度-20 ~ 70°C
- 配备硬件看门狗时间系统保护

规格

规格		Box computer
处理器系统	CPU	TI Sitara™ AM3352 Cortex®-A8 800MHz processor
	Capacity	1GB of onboard DDR3 at 800 MHz
	Flash	8 GB of eMMC NAND Flash for OS and 4 MB of SPI NOR Flash for ADV loader
以太网	Transceiver	RTL 8211
	Speed	2 x 10/100/1000 Mbps
WLAN	WIFI/BT	IEEE 802.11ac/a/b/g/n 2*2 WLAN+BT 4.2 On board (option)
看门狗计时器		MSP430G2202 (timeout: 1 ~ 6553s, default 60s/power on/off 1s)
I/O	USB	1 x USB2.0 OTG
	Serial Port	2 x RS232/485 w/ 4wires
	GPIO	6
	I²C	1
	SPI	1
	Button	1 x Reset button
	Indicator	4 (1 x Power, 3 x User Programmable)
扩展	Mini PCIe	1/USB signal only
	M.2	NA
	SD Socket	1 x Mirco SD slot
	SIM	1 x Nano SIM slot
	Antenna Hole	4
电源	Power Supply Voltage	12 ~ 24 V DC-in
	Power Type	2-pole lockable DC-in
	Power Consumption	4.7W (burning)
环境	Operational Temperature	-20 ~ 70 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
物理特性	Dimensions (W x D x H)	139 x 85 x 30 mm
开放操作系统		Linux Yocto2.4
认证		CE/FCC/CCC/BSMI

结构图

Unit: mm



订购信息

料号	CPU	内存	eMMC	SD	Serial	GPIO	USB OTG	LAN	Operating Temperature
EPC-R3220IS-OLA1	TI AM3352 800MHz	1GB	8GB	1	2	6	1	2	-20 ~ 70 °C

装箱单

料号	描述

外部I/O

可选配件

料号	描述
96PSA-A36W12R1	ADP A/D 100-240V 36W 12V
1700023307-01	DC jack/plug-in cable 1*2P-5.0 10 cm RSB-4220
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
170203180A	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Power cord 3P UL 10A 125 V 180 cm
1700019146	Power Cord CCC 3P 10A 250V 183cm
SQF-ISDS1-4G-82C	SQF SDHC C10 SLC 4G, 1CH (0~70°C)
SQF-ISDS1-8G-82C	SQF SDHC C10 SLC 8G, 1CH (0~70°C)
SQF-ISDS1-8G-82E	SQF SDHC C10 SLC 8G, 1CH (-40~85°C)
968AD00479	Qucetel EC20CEFAG-MINIPCIE R2.1 LTE Cat 4
170203183C	Power cord 3P Europe (WS-010+WS-083) 183 cm
9696ED2000E	Power cord 3P UK 2.5A/3A 250 V 1.83 M
1700001524	Debug adapter board
1700020442-01	Debug port cable
1700023619-01	USB OTG cable_typeA M to mirco USB

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