

QS Family - QFN Style Solder-Down Computer-on-Modules



Processor

Industrial grade 650 MHz dual core
ARM® Cortex®-A7 based STM32 MP157C

Memory

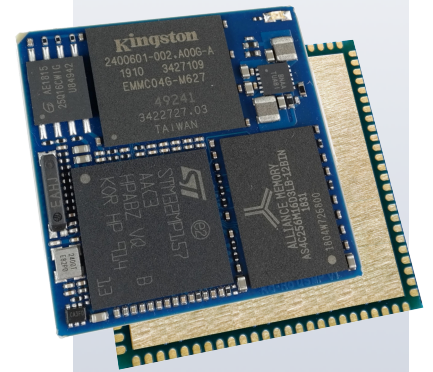
512MB DDR3L
4GB eMMC

Temperature

-25°C to 85°C

Size

Baseboard: 60mm x 90mm
QSMP: 27mm x 27mm x 2.3mm



All 100 pins on 0.1" pitch solder pads

TFT Display Connector

QSCOM: QSMP-1570

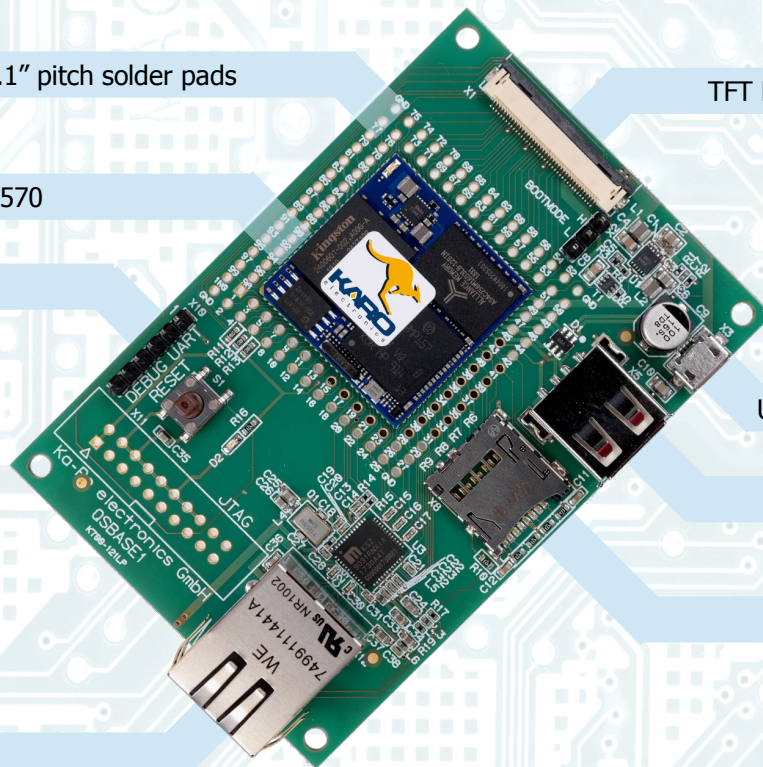
Debug UART

USB Power Supply

USB Host

SD-CARD

Gb Ethernet



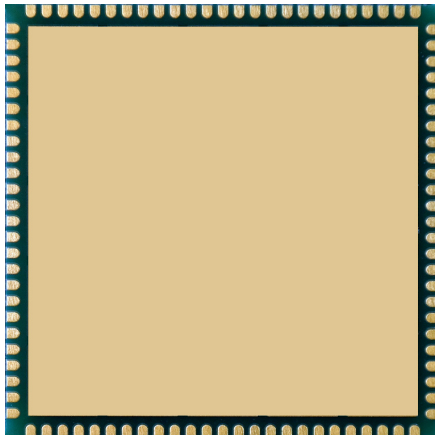
QFN Style Computer On Module Advantages

Defined Return Path

The reason PCB layout becomes more and more important is because of the trend to faster, higher integrated, smaller formfactors, and lower power electronic circuits. The higher the switching frequencies are, the more radiation may occur on a PCB. With good layout, many EMI problems can be minimized to meet the required specifications.

When a module or component is used in a design, the supplier specifies the basis for such a layout. It's not only the pinout which should lead to an easy wiring without the need for crossings. He has also provide a proper solution for the signal path back to the module. If this return path, mostly the ground plane, cannot be connected near the signal pin, the return current has to take another way and this may result in a loop area. The larger the area, the more radiation and EMI problems may occur.

Ka-Ro QSCOM modules uses a large ground pad on the bottom side. With this a defined ground plane connection is available for all signals. In addition to have a good return path for all signals this large ground pad can be used for cooling.



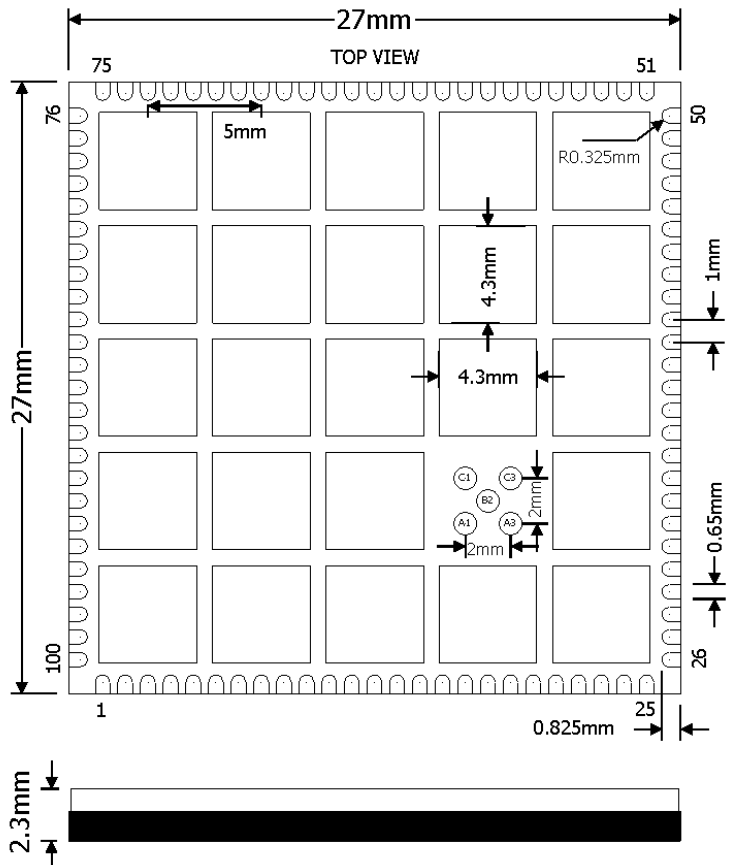
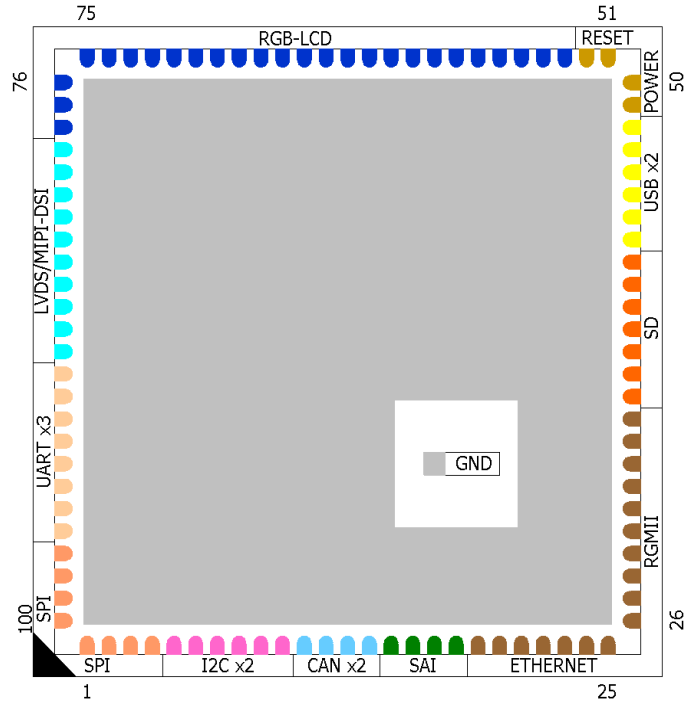
Easy Wiring - Even 2-layer printed circuit boards can be used.

With a solid ground plane on the bottom layer, high speed signals can be routed on the top layer at a defined impedance. However, this is only possible if a peripheral or plug can be connected directly without crossing the routing. Refer to fanout examples at the end of this document.

Advanced Soldering

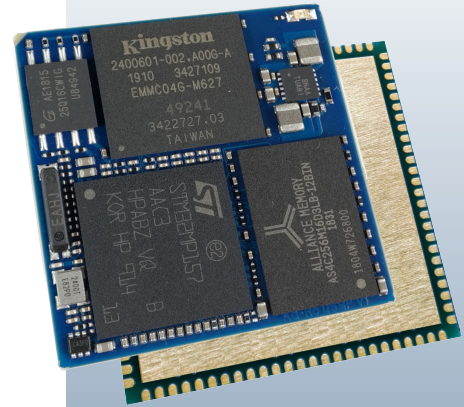
Using a large solder pad underneath the component has not only electrical and thermal advantages. This is also used to hold the component at a defined height during soldering, without the solder being compressed by the weight, which could result in short circuits.

Standard Contact Assignments



QS Family QFN Style Solder-Down Computer-on-Modules

- Solder-down version
- 27mm square
- 2.3mm total height
- QFN type lead style
 - 1mm pitch
 - 100 pads
 - Thermal pad
- Visual solder joint inspection possible after soldering
- Single-sided assembly
- High speed design compliant



Key Features

- Processor STM32MP1 Series
Dual-Core Arm® Cortex®-A7 650MHz
Cortex-M4 209MHz
- RAM 128MB up to 512MB DDR3L
- ROM 128MB SLC NAND or
4GB eMMC
- Grade Industrial
- Temperature -25°C to 85°C (eMMC)
-40°C to 85°C (NAND)
- Display support
- Display Interface 24-bit RGB
MIPI® DSI (2-lanes)
- GPU 3D GPU: Vivante®,
OpenGL® ES 2.0
- Connectivity
 - Ethernet, USB2.0, eMMC/SD
 - UART, I²C, SPI, PWM, SAI, CAN

**Dual
Cortex®-A7**

OS Support

- Linux