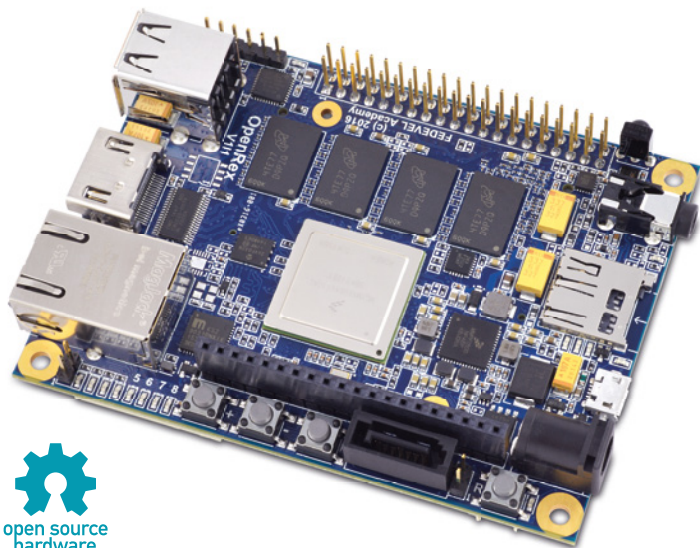# iMX6 OpenRex SBC
Open Source Hardware and Software project

OpenRex is an open source Single Board Computer with Raspberry Pi & Arduino like GPIO headers. It was designed for playing, learning and hacking, and is available with free Altium project design files including schematics and PCB layout source files, as well as manufacturing documentation.

open source hardware

This **open-source iMX6 OpenRex Single Board Computer** powered by NXP (Freescale) i.MX6 ARM® Cortex® A9 multicore CPU is the third member of growing family of the Rex boards designed by FEDEVEL Academy.

The board features **microcontroller**, multiple **camera inputs**, and a series of built-in sensors including **compass & accelerometer**, **gyroscope**, **humidity sensor**, and **temperature sensor** making it ideal choice for industrial as well as home automation applications.

It also provides connectors, buttons, LEDs and FTDI compatible **debug console** for simple user interaction.

iMX6 OpenRex SBC is further **equipped with Raspberry Pi and Arduino like GPIO headers** on both top and bottom side to allow multiple add-on boards stacking.

Arduino type header:	Raspberry Pi type header:
4x Analog input	2x I2C
3x GPIO	2x UART
1x I2C	1x CAN TX/RX
1x CAN	2x SPI
1x USB	3x GPIO/PWM

iMX6 OpenRex SBC is completely **free for personal & commercial use** and all documents are free for download, including Schematic and PCB.

Hardware Specification

CPU:	NXP i.MX6 ARM® Cortex® A9 Solo/Dual/Quad/QuadPlus up to 1.2 GHz
Microcontroller:	NXP LPC1345 ARM® Cortex® M3 with 72MHz CPU
DDR3-1066 SDRAM:	up to 4GB, 533MHz
Ethernet:	10/100/1000 Mbps
SPI Flash:	up to 128MBit
I2C EEPROM:	up to 128kBit
LED:	8+1 USER, 1x Power
Input power:	5V DC (Power Jack or USB micro)
Temperature range:	Commercial 0°C to +70°C Extended -20°C to +70°C
Dimensions:	70 x 95 mm

Compass & Accelerometer
Gyroscope, Humidity sensor, Temperature sensor
IR Receiver, CAN Transreceiver

Key Features

HDMI Output (up to QXGA 2048×1536)
Parallel CSI Camera input or Parallel Display output
LVDS or Differential Camera Input (Compatible with Raspberry Pi)
SATA, CAN, micro SD
PCIE mini slot (PCIE & USB & SIM)
USB OTG Micro, USB HOST 2x
Audio (Headphones output, Microphone input)
Touchscreen connector (Optional 4x Analog input)
I2C EEPROM, SPI FLASH
UART Debug console (FTDI compatible)
Analog input 4x
Button: 1x Reset, 3x User (e.g. Home, Volume +/-)

Supported Software

Yocto 2.3 *(preinstalled)*
Android 7.1 Nougat *(preinstalled upon request)*

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