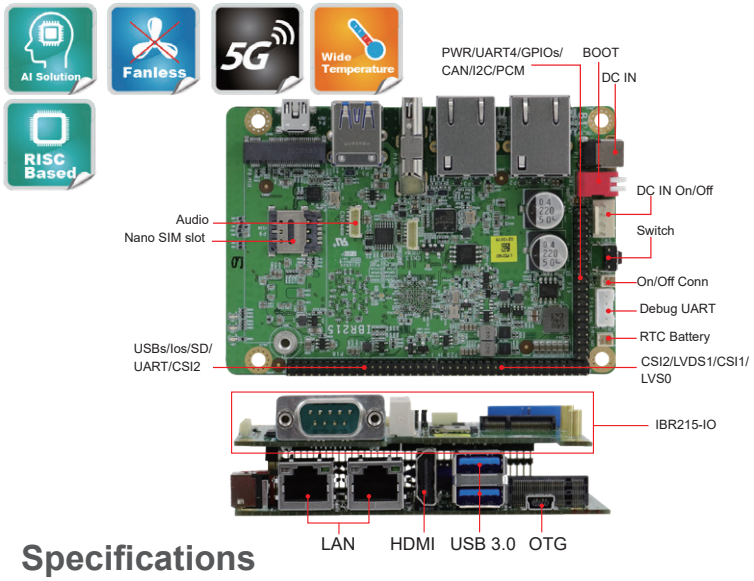
# IBR215

## AI Edge Board

Low-Power 2.5" SBC
with NXP i.MX 8M Plus - ARM Cortex-A53 Quad-Core Processor




## Features

- NXP Cortex™-A53, i.MX 8M Plus Quad-core 1.6GHz Processor
- Up to 2.3 TOPS NPU
- External connectivity for USB, HDMI & Ethernet
- Supports M.2 B-Key (3052)/m-PCIe for 5G module and NFC functions
- IBR215-IO: Expansion board for WiFi/BT, 4G/LTE, LCD, camera functions
- Supports Yocto5, Debian12 and Android14
- Wide-range operating temperature (-40°C~85°C)
- Ruggedized and fanless design

## Specifications

| | |
|---|---|
| Form Factor | 2.5-inch SBC |
| Dimensions | IBR215: 105mm(W) x 72mm(D) (4.13" x 2.83")<br>IBR215-IO: 100mm(W) x 72mm(D) (3.94" x 2.83")<br>IBR215+IBR215-IO: 105mm(W) x 72mm(D) x 35mm(H) (4.13" x 2.83" x 1.37") |
| CPU Socket | N/A |
| CPU Type | NXP i.MX 8M Plus - ARM Cortex-A53 Quad-core Processor |
| PCH | N/A |
| Memory | System memory: 3GB LPDDR4 on board (option: 4/8GB)<br>Data Memory: 16GB eMMC on board (up to 256GB) |
| BIOS | N/A |
| Watchdog Timer | 256 levels, 0~128 seconds |
| H/W Monitor | N/A |
| Storage Device Interface | uSDHC(eMMC/SD) |
| Graphics | OpenGL Es 1.1, 2.0, 3.0, 3.1, OpenCL 3.0, OpenVG 1.1, OpenGL 4.0, EGL 1.5, Vulkan 1.1 |
| Display | 1x 8-lane or 2x 4-lane LVDS<br>1x HDMI |
| Image Capture Interface | 2x MIPI-CSI |
| Video Codec | Decode: 1080p60, H.265, H.264, VP9, VP8<br>Encode: 1080p60, H.265, H.264 |
| I/O Chipset | NXP i.MX 8M Plus - ARM Cortex-A53 Quad-core Processor |
| TPM | Yes (sTPM) |
| Others | N/A |
| Power Consumption | 10.30 W |
| Storage Temperature | -40°C to 85°C (-40F to 185F) |
| Relative Humidity | 0 % to 90 % RH at 60° C (non-condensing) |
| OS Support | Yocto 5.0, Android 14, Debian 12<br>Support for other OS available upon request |
| External I/O | 1x On/Off button<br>1x 12V~24V DC-IN jack<br>1x SD socket (UHS-I SDR-104, 104MB/s max.)<br>1x Boot select switch (boot from eMMC or SD)<br>1x HDMI<br>2x USB 3.0 Type-A<br>2x RJ45 GbE LAN<br>1x Mini-USB OTG |
| Expansion IO | 3x 2mm pitch 2x20-pin headers for main board connection:<br>1x M.2 E-Key 2230 (SDIO, UART) for Wi-Fi/BT module<br>1x mPCIe (USB2.0, SIM, PCM) for 4G/LTE/Wi-Fi modules<br>1x DB-9 RS-232/422/485 port<br>2x USB 3.0 in 2x10 pin header<br>1x LVDS 2ch with Back light control<br>1x Capacitive touch IF<br>2x MIPI-CSI for cameras<br>2x CAN-FD |
| Internal I/O | 1x M.2 3052 B-Key with SIM socket (for 5G module)<br>2x $I^2C$ / 4x GPIO in a 6-pin header<br>1x Audio Line-in and Line-out in a 6-pin header<br>1x DC power supply in a 4-pin header<br>3x IO expansion headers (2x 20-pin) with the following signals:<br>1x USB2.0, 1x PCM, 2x UART(RX,TX), 1x SDIO, 1x UART (Tx,Rx,CTS,RTS), 2x USB 3.0, 1x LVDS 2ch with Back light control, 1x $I^2C$, 2x PWM, 3x GPIO, 1x Capacitive touch IF, 2x MIPI-CSI for cameras, 2x CAN-FD, 5V, 12V (DC-IN) |
| Operating Temperature | With heat sink or through housing design: -40°C~85°C (-40°F ~185°F)<br>Without heatsink:-40°C~65°C (-40°F ~149°F) |
| Certification | CE/ FCC Class-B |

## Ordering Information

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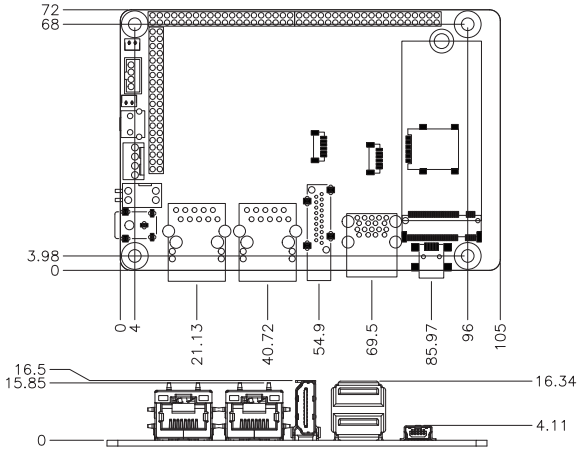
|---|---|
| IBR215-01 | ARM-based IoT Gateway, NXP Cortex®-A53, i.MX 8M Plus Quad-core 1.6GHz processor, 3GB LPDDR4, 16GB eMMC |
| IBR215-IO | Expansion Board for IBR215 |
| HSIBR215-A | Heat sink |

## Dimensions and Drawing




Remarks: 1. Specifications are subject to change without prior notice. 2. ODM/OEM is available. 3. For user's manual & datasheet download, visit www.ibase.com.tw.