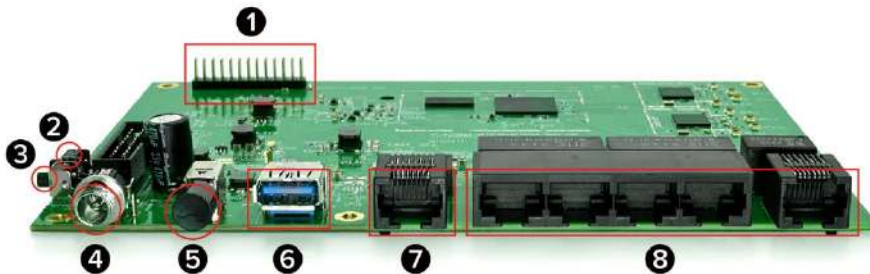
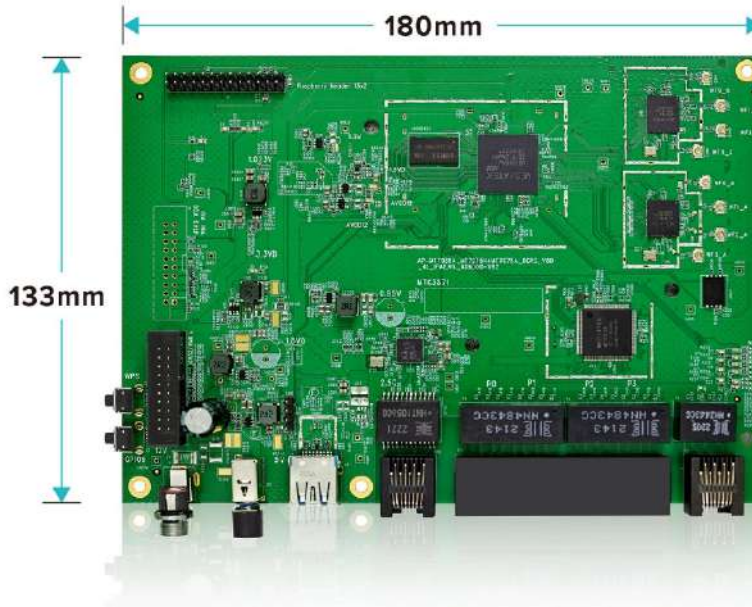


**DATASHEET**

# AX6000 Datasheet



- |                     |                 |
|---------------------|-----------------|
| 1. RASPBERRY HEADER | 5. POWER SWITCH |
| 2. WPS BUTTOM       | 6. USB 3.0      |
| 3. RESET INPUTER    | 7. WAN 2.5G     |
| 4. DC12V            | 8. LAN          |



## Description

AX6000 is a highly integrated wireless network router system-on-chip by Mediatek MT7986AV, MT7975PN, MT7975N used for high wireless performance, home entertainment, and homeautomation and so on.

AX6000 is fabricated with advanced silicon process and integrates a Quad-core ARM® Cortex-A53 MPCore™ operating up to 2.0GHz and more DRAM bandwidth. This SoC also includes a variety of peripherals, including one USB3.0/USB2.0 (Host), one USB2.0 (Host), and one PCIe2.0 2lane (RC) ports. To support popular network applications, AX6000 also implements two 2.5Gbps HSGMII Ethernet interface. AX6000 combines with two RF chips, they can provide dual-bandconcurrent chipset solution for WIFI6E AX6000 wireless router platform. User also can create tri-band solution by connecting wireless NIC card thru its PCIe port.

Besides the connectivity features, the hardware-based NAT engine with QoS embedded in AX6000 transporting the audio/video streams in higher priority than other non-timely services also enrich the home entertainment application. The SFQ separating P2P sessions from audio/video ones so that AX6000 guarantees the streaming service.

With the advanced technology and abundant features, AX6000 is well positioned to be the core of next-generation Smart WiFi AP router, and home gateway systems.

### Board Main Interfaces:

ROSPBERRY HEODER	POWER
WPS	SWITCH
RESET	USB3.0
DC12V	LAN

#### Applications:

- Internet Service Router
- Wireless Router
- Wireless Repeater
- Home Security Gateway
- Home Automation
- NAS Devices

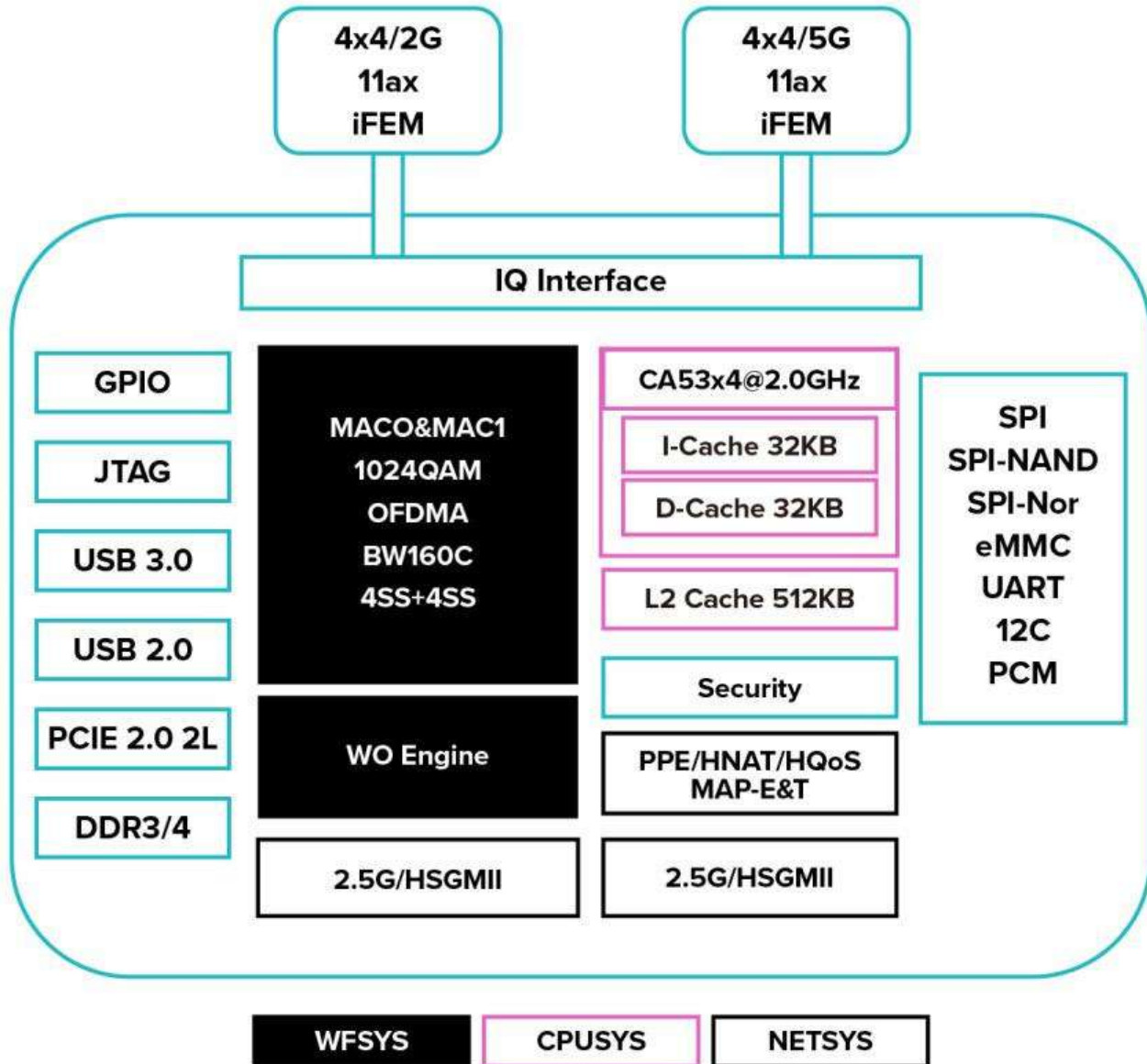


## Features

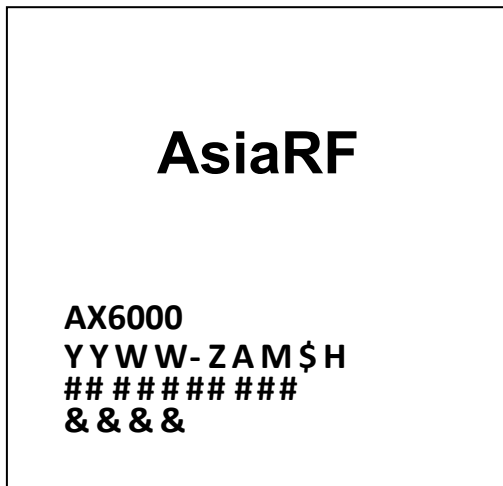
- Embedded Quad-core ARM® Cortex-A53 MPCore operating at 2.0GHz
  - 32KB L1 I-Cache and 32KB L1 D-Cache
  - 512KB unified L2 Cache
  - NEON/FPU
- Discrete 16-bit DDR3/4 chip
- NOR (SPI), NAND Flash (SPI, SLC), eMMC5.1
- USB3.0/USB2.0 Host x1
- USB2.0 Host x1
- PCIE2.0 2-lane HOST x1
- Audio PCM interface x1
- SPI, I2C, UART Lite, JTAG, MDC, MDIO, GPIO, PWM
- Two HSGMII(2.5Gbps) interfaces
- WiFi
  - Lead in 4x4+4x4 WIFI6E integration
  - Airtime Fairness
- HW NAT
  - Ethernet / WiFi
  - Wired speed
  - IPv4 routing, NAT, NAPT
  - IPv6 routing, DS-Lite, 6RD
- HW QoS
  - 128 hardware queues to guarantee themin/max bandwidth of each flow.
  - Seamlessly co-work with HW NAT engine.
  - SFQ w/ 1k queues.
- Security
  - Secure boot
  - Crypto Suite
  - Anti Clone
- Green
  - Intelligent Clock Scaling (exclusive)
  - DDR: ODT off, Self-refresh mode



## Functional Block Diagram



## Top Marking



### Description:

**YYWW: Date**

**code#: LOT**

**NO.**

**\$/&: Internal control code**

## Ordering Information

Part Number	Package (Green/RoHS Compliant)
AX6000	180 x 133 mm

Note: a heat sink is required in max ambient temperature.

## Specifications | Hardware Features

<b>Wireless LAN</b>	Compatible with MT7975N, MT7975PN 802.11ac WAVE2
<b>Memory</b>	NAND Flash Serial 1G-bit , DDR3,SDRAM,4Gbit
<b>Interface</b>	RASPBERRY HEADER Power DC12V Power Switch PWR adapter WAN*1(2.5G) LAN*5(1G) RESET button WPS button
<b>Dimension</b>	180 x 133 mm
<b>Certifications</b>	FCC/CE by request
<b>Power</b>	DC Power 12V/ >2.5A

