Ingenic Newton

Wearable and IoT devices platform

Ingenic Newton
JZ4775 + MEMS & ECG sensors + WIFI/BT/NFC/FM
22 x 38 x 3 mm

Newton Lite
JZ4775 + MEMS & HR sensors + Bluetooth
16 x 38 x 3 mm

Ingenic Newton is a tiny computer-on-module development platform that is powered by the low power, high performance 1GHz MIPS-based Ingenic JZ4775 SoC that runs Android and Linux. It offers Wi-Fi, Bluetooth, MEMS sensors, together with LCD display and touch screen. The board is designed to provide a highly optimized, best-in-class low power solution for wearable and the Internet of Things devices. In addition, another platform called Newton Lite is provided. The main differences between Newton Lite and Newton are Newton Lite supports Heart-Rate sensor and Bluetooth single connectivity module, while Newton supports ECG sensor, and Wi-Fi+Bluetooth+NFC+FM 4-in-1 combo module. Furthermore, the board dimension of Newton Lite is smaller than Newton.

Newton Block Diagram
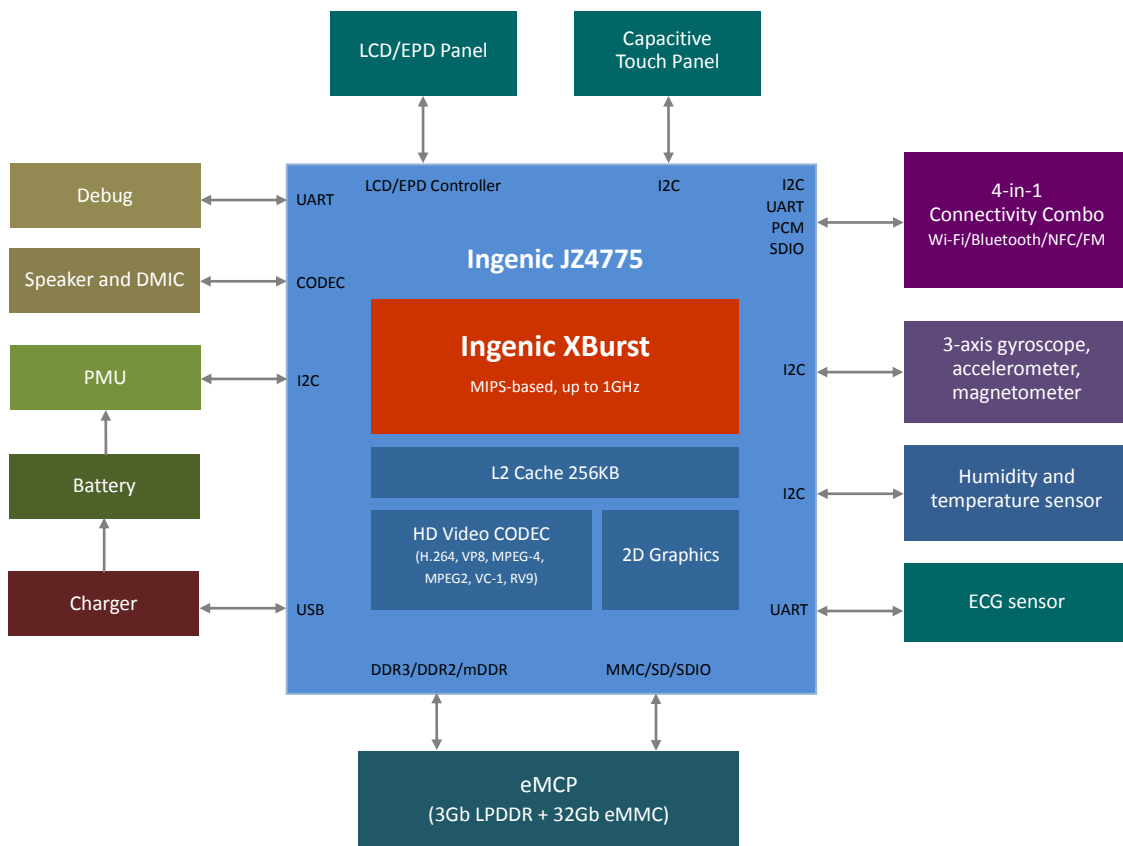
Newton Detailed Specification

- CPU: 1GHz XBurst-based Ingenic JZ4775
- Multimedia:
    - Dedicated 2D graphics engine
    - VPU (MPEG-2, MPEG-4, VC-1, H.264, VP8, RV9), 720p@30fps
- Memory:
    - 256KB L2 cache RAM
    - 3Gb LPDDR1
    - 32 Gb eMMC
- 4-in-1 combo wireless connectivity:
    - WiFi (802.11 a/b/g/n at 2.4/5 GHz)
    - Bluetooth 4.0 + EDR (BLE Compliant)
    - FM
    - NFC
- Sensors:
    - 3-axis gyroscope, accelerometer, magnetometer
    - pressure, humidity and temperature
    - ECG sensor (optional)
- Display:
    - TFT LCD: 1.6", 240 x 240 resolution, 262K colors, LED backlight
    - E-Ink display (optional): 1.5", 192 x 288 resolution, color display
- Touchscreen: support
- Audio: DMIC, speaker
- Power: USB and Battery, with PMU and charger
- Button: POWER and HOME buttons
- Other I/O: USB 2.0, I2C, UART, GPIO, Motor
- Power comsumption:
    - < 4mW standby
    - < 100mW MP3 playing
    - < 80mW lowest running
    - < 260mW highest running
- Dimensions: 38 x 22 x 3 mm
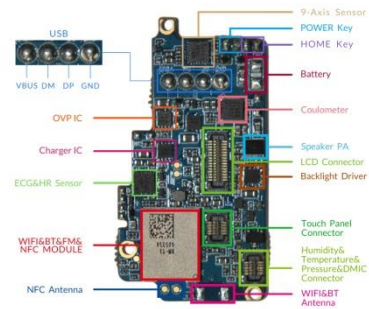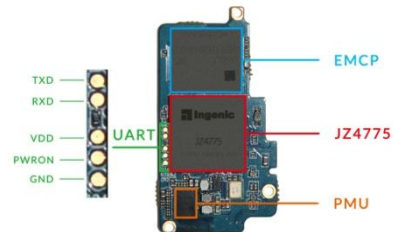
Runs Multiple Open Operating Systems

Newton can run Linux 3.0.8, Android 4.3 Jelly Beans and several real-time operation systems. And the source codes are open to developers giving you the flexibility to customize your own drivers and applications.

Targets for Wearable and IoT markets

Benefit from the low power, high performance and high integration XBurst-based JZ4775 SoC. Newton can be used in the most popular wearable and consumer IoT devices, such as Smart Watch, Smart Glass, Smart Appliances etc.

What is the difference between Newton and Newton Lite?

Newton Lite is the cost-down version of Newton. There are 3 main differences: Newton Lite uses Heart-Rate sensor, Bluetooth single connectivity module, MCP (4GB NAND Flash + 4Gb LPDDR1). While Newton uses ECG sensor, Wi-Fi/Bluetooth/NFC/FM 4-in-1 combo module, and EMCP (32Gb eMMC + 3Gb LPDDR1). Furthermore, the board dimension of Newton Lite is 16 x 38 x 3mm and is smaller than Newton.

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