

Ingenic Newton2

Wearable Development Platform



Introduction

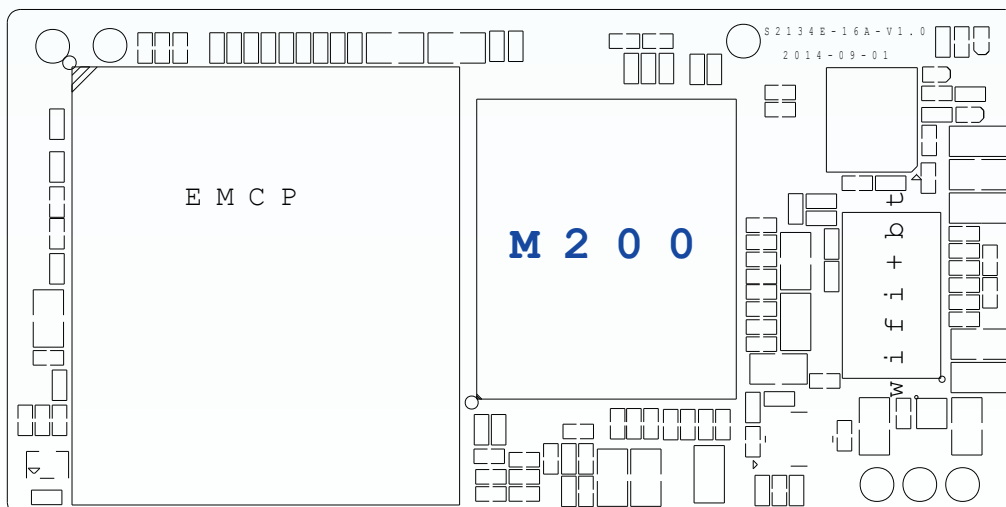
The Ingenic® Newton2 provides a development platform for wearable device manufacturers to design and promote to market a differentiated product in a shorter amount of time. The Newton2 has been designed to a small 15 x 30 mm hardware module with various external connectors that can fast forward your product development while reducing risk and controlling costs. The Newton2 uses the dual-core 1.2GHz processor Ingenic M200 which is dedicated for the wearable devices such as smart watch and smart glass. The Newton2 can run the latest version of the Android and Linux operating systems, which makes it easy to develop various device drivers and user applications on it.

Target Applications

- Infotainment
 - Smart watches
 - Augmented reality headsets
 - Smart glasses
 - Smart camera etc.
- Fitness and Wellness
 - Smart clothing
 - Smart sports glasses
 - Activity monitors
 - Sleep sensors etc.
- Healthcare
 - Wearable healthcare monitors
- Others.

Highlights

- ◆ A compact module of very small dimension (15 x 30 x 2.4 mm), which contains CPU, eMCP, PMIC, Wi-Fi, BT and MEMS sensor, together with 7 on-board connectors for LCD, TP, audio, camera, I2C, UART and GPIO etc.
- ◆ Powered by the Ingenic dual-core wearable dedicated SoC M200. One core is up to 1.2GHz for high performance applications, the other is up to 300MHz for low power applications.
- ◆ Innovative MIPS-based high performance and low power CPU technology XBurst® and 3D graphics engine enables running Android fluently while consuming very low power.
- ◆ Ultra low working power and less than 3mW board standby power extends battery life and allows the device working at least 2 times longer than the other same type devices.
- ◆ H.264 encoder/decoder 720P@30fps provides full-featured multimedia capabilities.
- ◆ Integrated internal audio CODEC with voice trigger enables wake-up on voice.
- ◆ Wi-Fi IEEE 802.11b/g/n and Bluetooth 4.1 (BLE) allows for the wearable device to connect to a smartphone or directly to the cloud.
- ◆ Integrated MEMS sensors with 3-axis gyroscope + 3-axis accelerometer + 3-axis magnetometer allows for developing excellent user experience for sports and games applications.
- ◆ Hardware schematics provided freely. Open source Android 4.4, and complete SDK for software developers.



Ingenic Newton2 Development Platform

PHYSICAL	
Form factor	A modular board with 7 external connectors
Dimensions	15 x 30 x 2.4 mm
COMPONENTS	
Processor	Ingenic dual-core M200 SoC, one core up to 1.2 GHz, the other core up to 300MHz . GPU: 3D with OpenGL ES 2.0/1.1 and OpenVG 1.1 . VPU: H.264 720P@30fps encoding and decoding . ISP for image pre-processing
Memory	eMCP H9TP32A4GDCCPR (4GB eMMC + 4Gb LPDDR2)
PMIC	Ricoh RC5T619 power management IC
Wi-Fi	Broadcom 43438 single-band 2.4GHz IEEE 802.11b/g/n
Bluetooth	Bluetooth 4.1 (Bluetooth Low Energy), 2.1 + EDR
Sensor	InvenSense MPU-9250, 9-axis gyroscope + accelerometer + magnetometer
USB 2.0	Micro USB device
UART	Serial debug port
Clocks	24MHz, 32.768kHz; 26MHz (Wi-Fi/BT)
EXTERNAL CONNECTORS	
Display (24-pin)	MIPI-DSI and power signals for 240X240 1.63" AMOLED module
Touch (14-pin)	power and interrupt signals for capacitive touch screen
Audio (14-pin)	DMIC and AOHPL/R
Camera (16-pin)	MIPI-CSI and I2C
Button (14-pin)	POWER, BOOT_KEY, BOOT_SEL1
GPS/Sensor (18-pin)	UART, I2C, GPIO
RF Connect (4-pin)	Wi-Fi and 2.4GHz BT antenna
POWER	
Input	Li-on battery: 3.7~4.2V; Micro USB: 5.0V
Power consumption	CPU full-working: 0.07mW/MHz Board Standby: 3mW
SOFTWARE	
Supported OS	Android 4.4, Linux 3.10
Code availability	Open source

