LUMISSIL Microsystems
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Halley6
Development Kit for AIoT



The Halley6 is the AIoT application development kit for X1600/X1600E/X1600HN. The kit consists of development boards (core module, base board), Screen, operating system and SDK package. The kit is featured with compute capacity, real-time controlling, on chip memory, a variety of interfaces for connectivity. The target applications include algorithm applications, human machine interfaces, and real-time control applications as well. Users can design and evaluate such applications with the kit.

Open source operation system, drivers, burning tools among other software packages and documents about hardware design are available. The core module, which can greatly assist the developers' R&D efforts, is available as a standalone product, too.

Though Halley6 takes an X1600E as the processor, it can be used to for application evaluating for X1600 and X1600HN as well. X1600, X1600E, and X1600HN are pin-to-pin compatible.

FEATURES

- Ingenic X1600E as the SoC, major CPU core XBurst1, at 1.0GHz, MIPS ISA, with FPU, MMU and minor CPU core XBurst0, at 240MHz
- Memory, 64MB LPDDR2 in chip, 128MB SPI NAND Flash
- TFT Screen, 3.5 inches, 320 x 480
- Camera Interfaces: Support DVP camera interface; MIPI-2lane, up to 1280 x 1080P@60fps
- USB2.0 (Type-C), full speed and high speed modes are supported, can be host or device, OTG
- 10/100Mbps Ethernet, RJ45 port
- UART for debugging
- WIFI & Bluetooth, Wi-Fi 2.4GHz IEEE 802.11 b/g/n and Bluetooth 5.1
- Audio CODEC on board
- 2 Speaker interfaces
- Linux 4.4.94 / 5.10 with open source code
- Interrupt Controller, Watch Dog, System Timers, DMA, and PWM with timer and counter, RTC
- Low power modes: Idle, Sleep
- 1 LED for power
- 3 keys: 1 key for boot select, 1 reset key and 1 key to wake the system

BENEFITS

- Open Source Hardware & Software - hardware schematic diagram, PCB design, BOM, OS (Linux4.4.94/5.10) and driver software packages
- Core Module – with design stamp-holes, available for mass production
- Processor - a compute engine as well as a control MCU
- Connectivity - Ethernet, USB, SSI, UART, PWM, ADC, I2C

APPLICATION/SOLUTIONS

- Algorithms: QR Code Readers, Finger Print Recognition
- Human Machine Interfaces: Smart Air-conditioners, Smart Refrigerators, Smart Small Appliances
- Real Time Control: Portable Printers, Robot Vacuums

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ORDERING INFORMATION

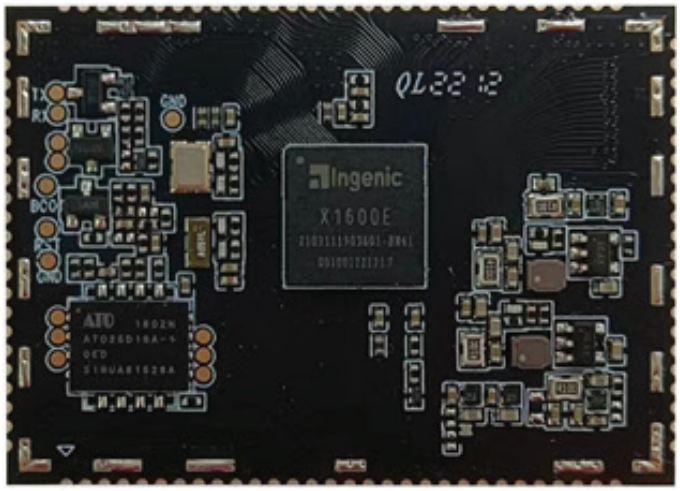
Development Board:

Part No.	Chip Package
HALLEY6-EB	BGA-159

Core Module (Option available for mass production):

Part No.	Chip Package
HALLEY6-COREBOARD-EB	BGA-159

CORE MODULE IMAGE



DEVELOPMENT BOARD IMAGE





SYSTEM DIAGRAM

