Discover32

The ultimate IoT development platform

" The Discover32 is the perfect hardware platform for Makers, create lots of Powerful and exciting IoT projects."

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Hardware Features.

Expressif ESP32 Processor: (ESP32-D0WD-V3)
Main processor: Tensilica Xtensa 32-bit LX6 microprocessor Dual Core
Clock frequency: up to 240 MHz , Performance: up to 600 DMIPS

Ultra low power co-processor: allows you to do ADC conversions, computation, and level thresholds while in deep sleep.

Memory:
Internal memory:
ROM: 448 KB For booting and core functions.
SRAM: 520 KB For data and instruction.
RTC fast SRAM: 8 KB For data storage and main CPU during RTC Boot from the deep-sleep mode.
RTC slow SRAM: 8 KB For co-processor accessing during deep-sleep mode.
eFuse: 1 Kbit Of which 256 bits are used for the system (MAC address and chip configuration)
and the remaining 768 bits are reserved for customer applications, including Flash-Encryption and Chip-ID.
Embedded flash: 16 MB (ESP32-WROOM-32UE)

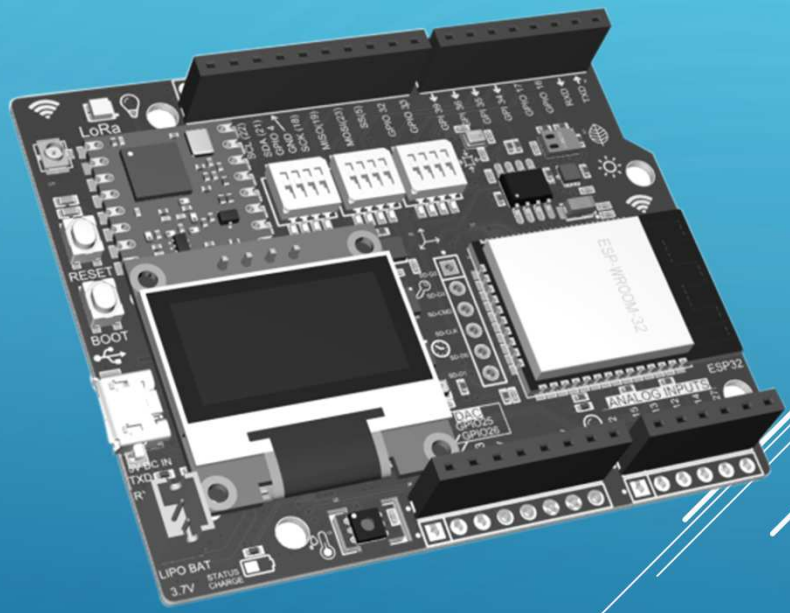
General Purpose Inputs/outputs Peripheral:
Rich peripheral interface with DMA that includes capacitive touch, ADCs (analog-to-digital converter),
DACs (digital-to-analog converter), I^2C (Inter-Integrated Circuit), UART (universal asynchronous receiver/transmitter),
CAN 2.0 (Controller Area Network), SPI (Serial Peripheral Interface), I^2S (Integrated Inter-IC Sound),
RMII (Reduced Media-Independent Interface), PWM (pulse width modulation), and more.

Wireless connectivity:

Wi-Fi: 802.11 b/g/n/e/i (802.11n @ 2.4 GHz up to 150 Mbit/s)

Bluetooth: v4.2 BR/EDR and Bluetooth Low Energy (BLE)

LoRaTM Modem Long Range Transceiver Radio Module 868 Mhz



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Hardware Features.

Security:
IEEE 802.11 standard security features all supported, including WFA, WPA/WPA2 and WAPI
Secure boot
Flash encryption
1024-bit OTP, up to 768-bit for customers
Cryptographic hardware acceleration: AES, SHA-2, RSA, elliptic curve cryptography (ECC), random number generator (RNG)..

Cryptographic accelerator with Secure Hardware-based Key Storage

Power :
Can be powered from any combination of USB, Battery, or VIN Pin
Nominal Operating Input voltage: 5V
Battery voltage: 3.2V - 4.2V
Over-voltage protection
Low-noise, low power, switching power supply, with output up to 800mA
Built in Li-Ion/LiPolymer charger with charging status indicator LED
low power consumption

Real-Time Clock (RTC) and calendar optimized for low power consumption

Sensors and Peripherals:
Low Power 3-axis accelerometer and 3-axis
Indoor Air Quality Sensor (senses a wide range of TVOCs, eCO2 and MOX)
Absolute Barometric Sensor
Temperature and Relative Humidity Sensor
UV index and Ambient Light Sensor
Addressable RGB color Led
Battery voltage reading
Boot and RESET button
GPIO Status Led Blue ,
OLED I2C Display ►Size: 0.91 inch ►128x32 Dot Matrix ►Built-in controller SSD1306

Interfaces:
USB (via CP2101 UART Bridge),
25x General Purpose IO,
15x 12-bit ADC and 2x 8-bit DAC
9X touch sensor
CPU on-chip temperature sensor
4x SPI master/slave (can be mapped to any pin)
2X I2C master/slave (can be mapped to any pin)
2X I2S (Inter-IC Sound Interface) master/slave modes,in full or half duplex, (can be mapped to any pin) , 3x UART
SD memory card support
RTC timer and watchdog
Hall sensor on-chip
16 channels PWM (can be mapped to any GPIO)
Ethernet Interface

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Hardware Features.

Application Frameworks:

General Purpose:

- ESPRESSIF ESP-IDF: Base SDK for all other SDKs and general application development (Device Drivers, System, freeRTOS, Storage,Networking, Security and tools)
- ESP-RainMaker: End-to-end platform for easy productization with application firmware, cloud application, phone apps and voice assistant skills
- Arduino IDE
- ESP-Hosted: Connectivity module firmware with network and BT interface provided to host
- ESP-RainMaker: End-to-end platform for easy productization with application firmware, cloud application, phone apps and voice assistant skills
- Amazon FreeRTOS: Amazonmaintained FreeRTOSSDK.
- PlatformIO IDE (is a cross-platform embedded development environment with out-of-the-box support for ESP-IDF.)