

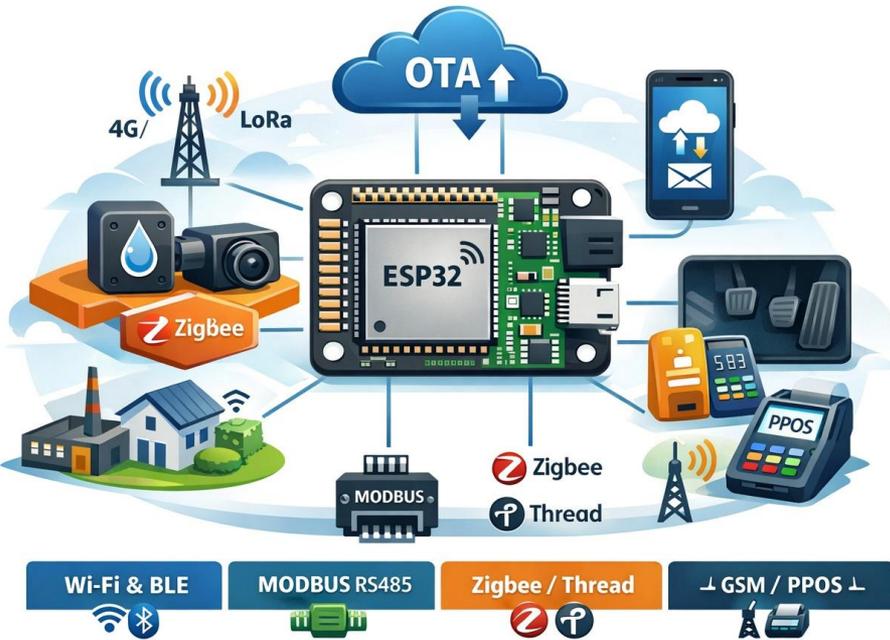


Inthings

Next-Generation IoT With ESP32

Smart, Connected & Production-Ready Solutions by Inthings

Overview



ESP32 MCU Families & Wireless SoCs:

- ESP32, ESP32-S2, ESP32-S3
- ESP32-C2, C3, C6
- ESP32-H2 (Zigbee/Thread/Matter)

Interfaces:

- UART
- SPI
- I2C
- ADC
- DAC
- RS485
- SD card
- PWM
- GPIO
- Camera

Firmware & Connectivity:

- ESP-IDF
- FreeRTOS
- HTTPS
- MQTT
- MODBUS
- CMUX
- Wi-Fi
- BLE
- 4G
- LoRa

Application Domains:

- Water monitoring
- camera telemetry
- industrial IoT
- GSM connectivity

Core ESP32 Capabilities



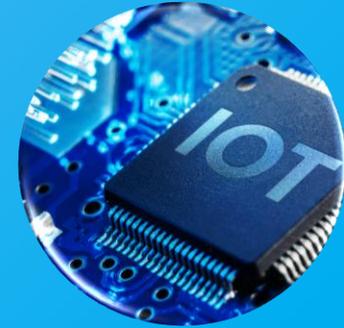
Hardware Expertise:

- Low-power design
- ADC sensing
- RS485
- SD logging
- camera interface



Firmware Expertise:

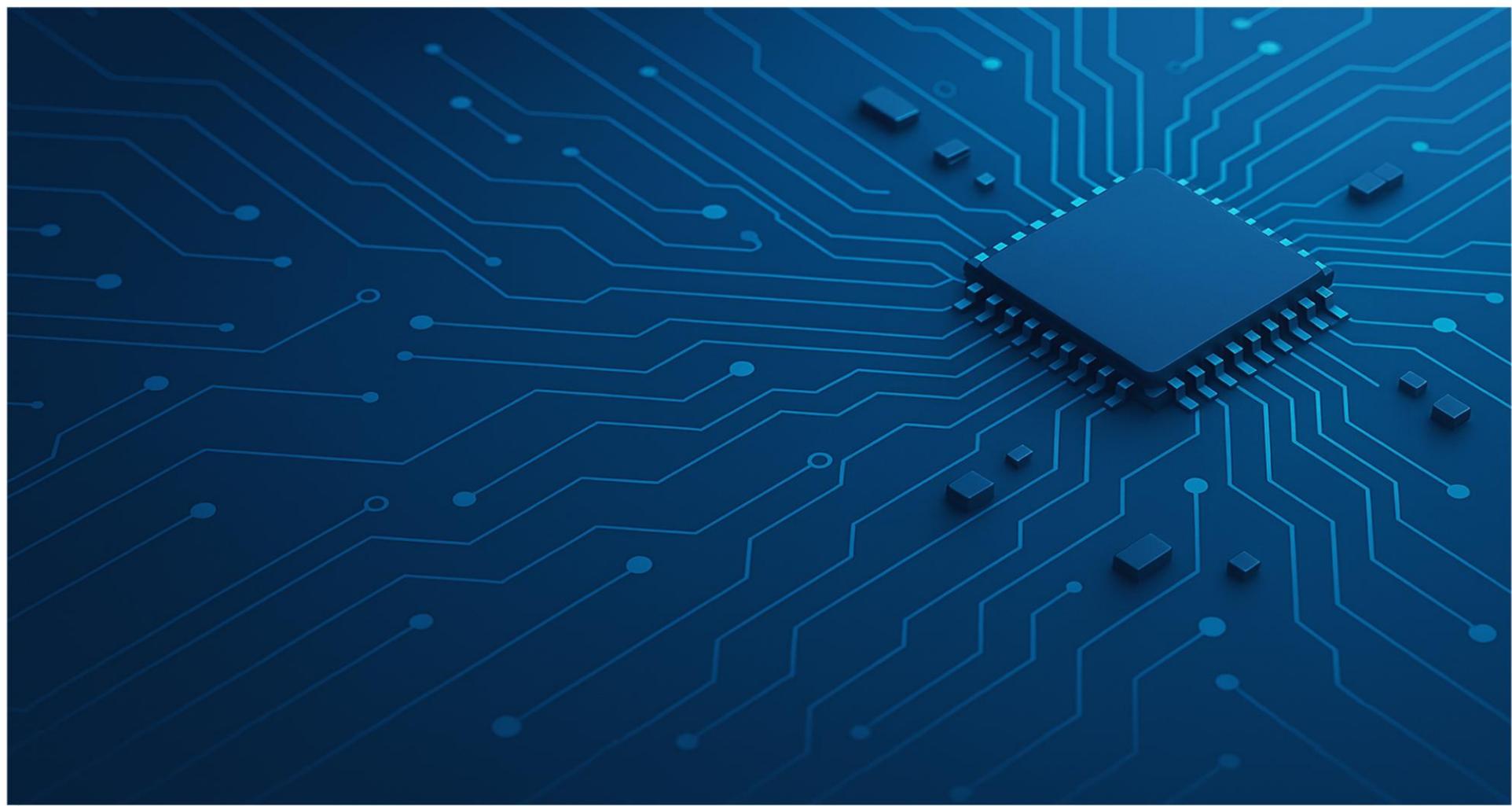
- ESP-IDF drivers
- BLE/Bluetooth
- PPP-over-Serial (PPOS) for IP data
- Zigbee (C6/H2)
- OTA
- Secure Boot
- Flash Encryption



System Capabilities:

- Real-time sensing
- video streaming
- PPOS GSM
- CMUX virtual channels





PROJECT PORTFOLIO



WATER QUALITY MANAGEMENT DEVICE



Powered by ESP32 Micro-controller



Unique ID for each device



Works on 10-15V battery.



Over-The-Air (OTA) updates via HTTPS.



Uses the MODBUS protocol to connect to sensors.



SD card data logger



Auto switch to battery power if external supply is disrupted



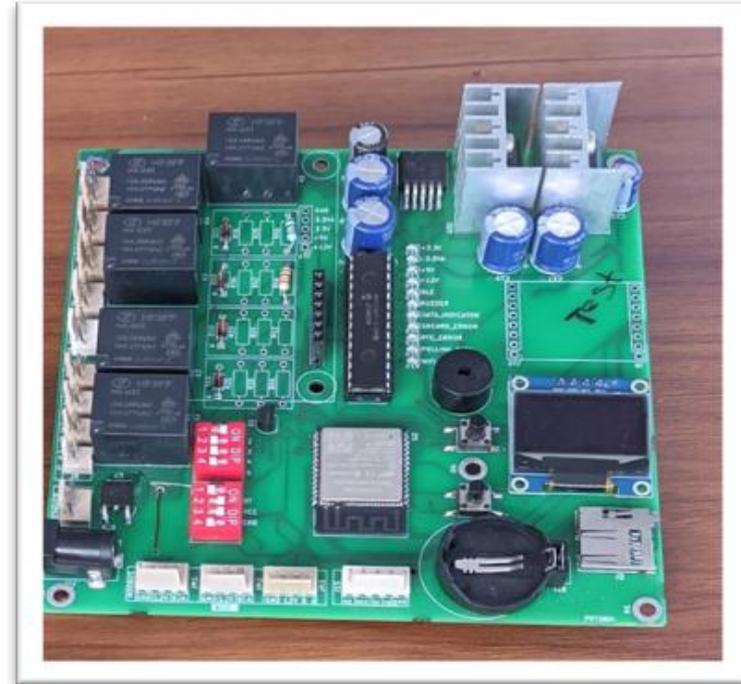
5 x On-board relays controlled remotely from the cloud platform.



Wi-Fi, 4G, Bluetooth or LoRa



OLED display



SEWAGE PUMP CONTROLLER DEVICE



Double layer design enables small form factor



Works on 10-15V battery.



Auto switch to battery power if external supply is disrupted.



Security: Flash Encryption and Secure Bootloader Enabled.



Communication channels: Wi-Fi, Bluetooth and 4GLTE as options



Unique ID for each device



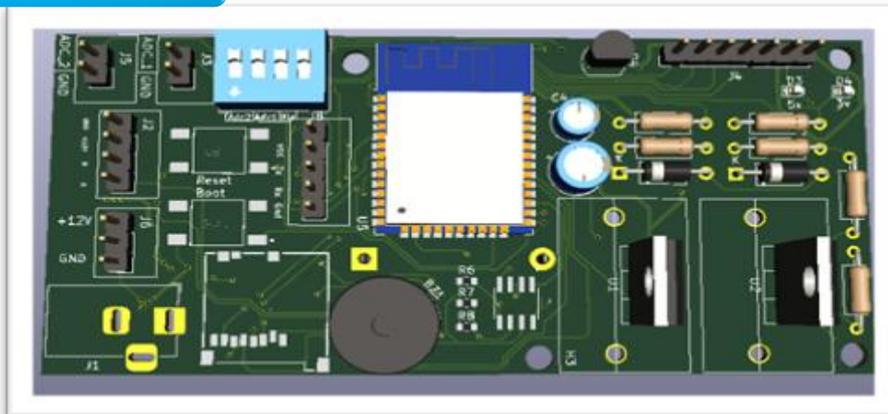
Real-time clock



SD card data logger



2 x analogue input with a mixture of 5 volt and current loop with source or sink option.



ESP32-CAM Driver Foot Pedal Monitoring



ESP32-CAM VIDEO
CAPTURE



SENDS FRAMES VIA
BLE TO ANDROID APP



CAPTURES
ACCELERATOR &
BRAKE PEDAL USAGE



LOCAL ON-DEVICE
BUFFERING



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