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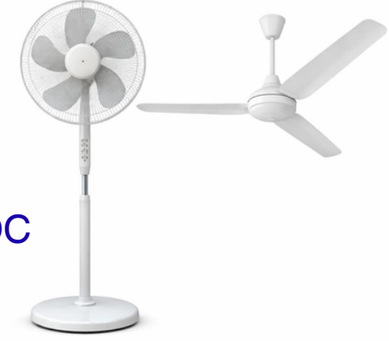
XPRO FLIGHT CONTROLLER

XPRO is a high-performance drone flight controller designed for precise stabilization and real-time control of UAVs.
It integrates advanced sensors like gyroscope and accelerometer to ensure smooth flight and accurate positioning.
The controller supports multiple flight modes and seamless integration with ESCs, GPS, and telemetry modules.
Built for reliability.

LVCF SOLUTIONS



Designed for efficient control of 24V BLDC ceiling fans using a Sonix FOC (Field-Oriented Control) microcontroller.
It enables smooth, silent operation with precise speed and torque control through advanced FOC algorithms.
The board integrates motor driver circuitry, protection features, and optimized power management for high efficiency.

ESC BOARD FOR DRONE

Upgrade your drone with a high-performance 4-in-1 Electronic Speed Controller (ESC)—engineered to deliver smooth motor control, compact integration, and superior efficiency. Perfect for modern quadcopters, this all-in-one solution simplifies design while maximizing performance.

SMART IOT SOLUTIONS FOR APPLIANCES

Split Electric Water Heater (EWH) featuring an integrated remote control unit for advanced temperature management. This design enables seamless adjustment and real-time monitoring without direct access to the main unit, enhancing user safety, comfort, and system efficiency. The solution is optimized for easy integration, reliable performance, and scalable manufacturing across a wide range of water heating applications.

IOT-BASED HEATER CONTROL PLATFORM

Wi-Fi–based Smart Geyser Controller (IoT) designed for intelligent and energy-efficient water heater management. Supports remote monitoring, temperature control, scheduling, and real-time usage tracking via Android applications. The solution offers seamless OEM integration with scalable commercial cloud connectivity, enabling advanced features such as data analytics, remote diagnostics, and fleet management. Delivers enhanced user convenience, improved energy efficiency, and reliable performance for next-generation smart home and connected appliance ecosystems.

RENESAS SBC

Renesas-based Single Board Computer (SBC) designed for high-performance embedded applications, integrating advanced peripherals, versatile communication interfaces, and optimized power management. It delivers reliable processing, scalable performance, and efficient system development for industrial and IoT solutions.

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IOT BASED HOME AUTOMATION

Home automation device using dual relays and a Beken Wi-Fi module for smart control.
It allows users to remotely switch appliances via a mobile app with real-time status feedback.
The solution ensures reliable connectivity, easy integration, and efficient control for smart home applications.

BLE WRISTBAND

BLE-based wristband solution developed for real-time student tracking and automated attendance, powered by the SONIX SN9380 BLE chipset. It enables continuous monitoring, enhanced safety, and reduced manual effort, with flexible customization and seamless integration into existing systems.

BLE TAG

BLE Tag solution powered by the SONIX SN9380 BLE chipset, developed for real-time asset monitoring. It enables efficient asset tracking, minimizes losses, and enhances operational efficiency across diverse environments.

WIFI & BLE COMBO MODULE

Our inhouse Wi-Fi + BLE combo module using the Beken BK7238 for versatile wireless connectivity.
It enables seamless integration of cloud communication and local Bluetooth control in IoT applications.
The module offers low power consumption, reliable performance, and easy integration for smart devices.

DQR UPI BASED PAYMENT GATEWAY DEVICE

UPI-based payment acceptor device for vending machine applications.
Upon successful payment confirmation, the device receives a secure notification and triggers the machine operation.
This solution enables seamless cashless transactions, improving automation, reliability, and user convenience.

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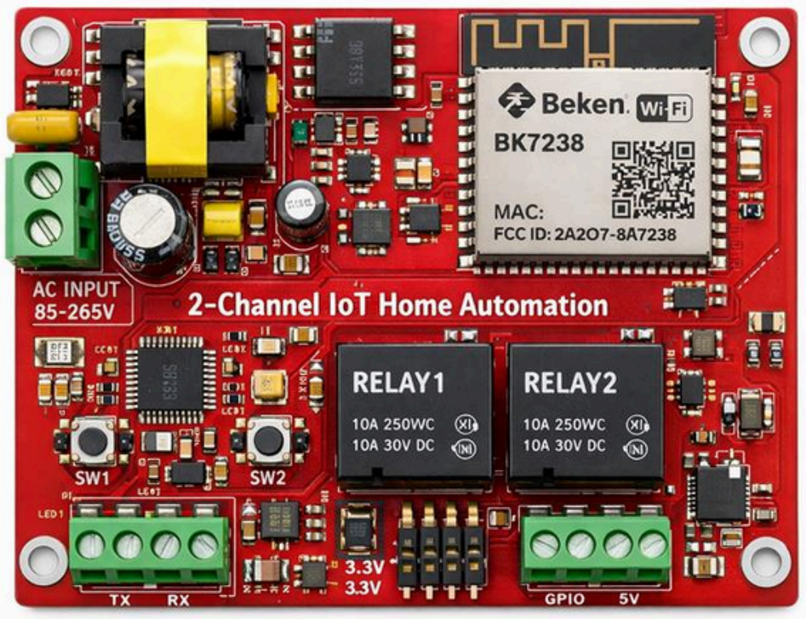
IOT BASED HOME AUTOMATION

Home Automation Device – Product Features
Our Home Automation Device is designed to provide smart, reliable, and seamless control of electrical appliances using advanced Wi-Fi connectivity and dual relay architecture.



FEATURES

- Dual Relay Control
- Control two independent appliances with high reliability and precise switching.
- Wi-Fi Enabled (Beken Module)
- Seamless connectivity for remote access and control via mobile application.
- Mobile App Integration
- Turn ON/OFF devices, monitor status, and control appliances from anywhere.
- Real-Time Status Feedback
- Instant updates on device status for improved user control and safety.
- Compact & Robust Design
- Space-efficient PCB design suitable for easy integration in switchboards.
- Energy Efficient Operation
- Optimized power consumption for continuous operation.
- Safe & Reliable
- Built-in protection features ensuring safe switching and long-term durability.
- Easy Installation
- Simple wiring and quick deployment for residential and commercial use.

Advantages :

- Remote Accessibility – Control appliances anytime, anywhere through mobile app connectivity.
- Enhanced Safety – Minimizes manual handling of electrical switches, reducing risk.
- Operational Efficiency – Saves time and improves convenience with automated control.
- Scalable Integration – Easily integrates into existing smart home or IoT ecosystems.

Applications

- Home Automation Systems – Control lights, fans, and appliances remotely for smart living.
- Commercial Buildings – Efficient management of electrical loads in offices, shops, and hotels.
- Industrial Automation – Remote switching of machinery and control panels in industrial setups.
- Energy Management Solutions – Schedule and optimize device usage to reduce power consumption.

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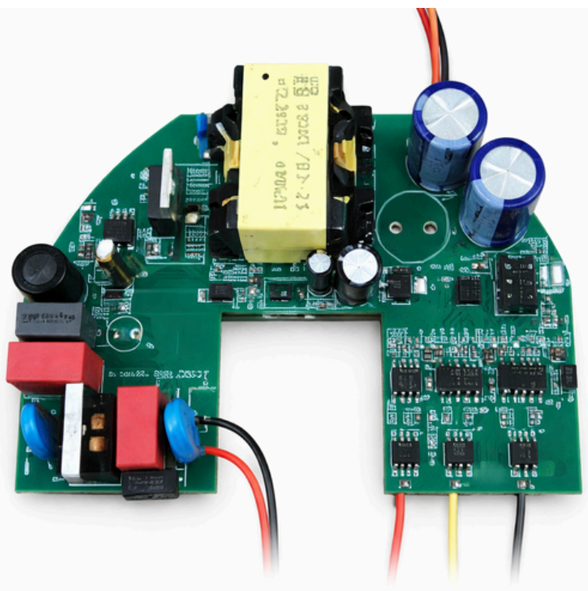
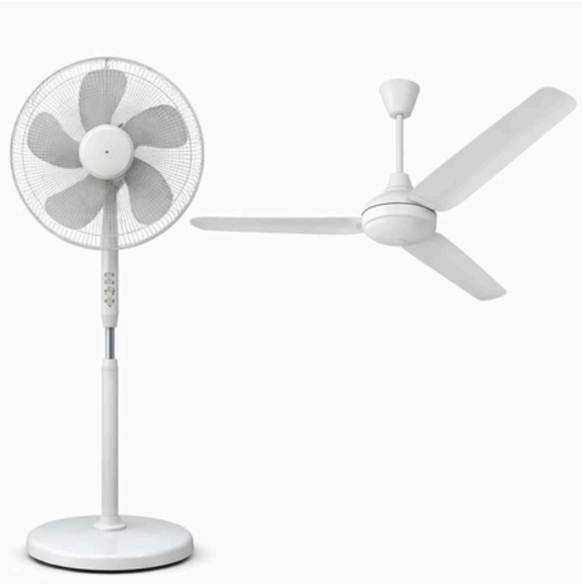
BLDC LVCF SOLUTION

- This LVCF board is designed using the SN32F405J MCU to efficiently control 24V, 2A BLDC ceiling fans.
- It utilizes advanced control algorithms to ensure smooth, silent operation with precise speed regulation.
- The board integrates motor driver circuitry, protection features, and optimized power management.
- Ideal for energy-efficient applications, it delivers reliable performance and extended motor life.





FEATURES

- SN32F405J MCU Based Control
- High-performance microcontroller for precise BLDC motor control.
- 24V, 2A BLDC Fan Support
- Optimized for low-voltage, energy-efficient ceiling fan applications.
  FOC / Advanced Control Algorithm
- Ensures smooth, silent operation with improved efficiency.
  Wide Speed Control Range
- Accurate speed регулиation with stable performance across loads.
  Low Noise Operation
- Minimizes electrical and acoustic noise for better user comfort.
  Integrated Motor Driver Circuitry
- Compact design with onboard driver stage for easy implementation.
  Protection Features
- Includes over-current, over-voltage, and thermal protection.
  Energy Efficient Design
- Reduces power consumption compared to conventional fans.
  Compact PCB Layout
- Suitable for easy integration inside fan housing.
  Reliable & Durable
- Designed for long life and consistent performance.

SPECIFICATION

- Chipset Used: SN32F405
  Input Voltage Range: 90 to 270 AC
- RPM: 300-400 RPM
- Power: under 32W
- Protection: over voltage/ under voltage
  /Surge, STALL, over current
- Multi Speed and Single Speed Options
- With Power factor correction Speed
- Controller: Analog Port or
- Remote Control (IR/RF/BLE/any UART Connectivity) or PWM control
- LED Down Light Optional

Applications

- Residential Ceiling Fans – Ideal for energy-efficient home fan solutions with silent operation and smart speed control.
- Commercial Spaces – Suitable for offices, showrooms, and hotels requiring reliable and low-power ventilation systems.
- Smart & IoT-Enabled Fans – Enables integration with remote control, mobile apps, and home automation systems.
- Retrofit & Upgrade Solutions – Can be used to upgrade conventional fans into high-efficiency BLDC-based systems.

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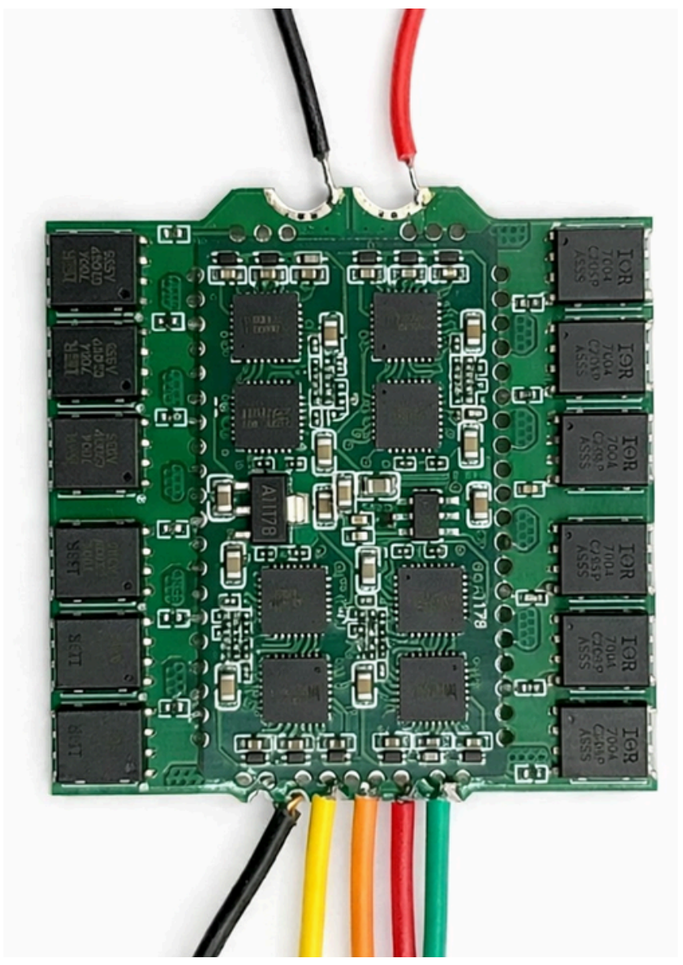
ESC BOARD FOR DRONES

Upgrade your drone with a high-performance 4-in-1 Electronic Speed Controller (ESC)—engineered to deliver smooth motor control, compact integration, and superior efficiency. Perfect for modern quadcopters, this all-in-one solution simplifies design while maximizing performance.



FEATURES

All-in-One Design Integrates 4 ESCs into a single compact board for cleaner builds

1)High Power Output
Supports 20A–60A+ per motor for demanding applications
2) Ultra-Fast Response
Compatible with DShot600 / DShot1200 for precise control
3) Lightweight & Space Saving
Reduces wiring, weight, and assembly time
4) Smart Protection
Built-in overcurrent, temperature, and voltage safeguards

Faster throttle response for better flight control
Reduced electrical noise (EMI)
Enhanced durability and reliability
Ideal for compact, high-performance drone builds

Seamless compatibility with popular flight controllers
Stack-friendly design for quick installation
Minimal soldering, maximum efficiency

Applications

- FPV Racing & Freestyle Drones
- Autonomous UAVs
- Mapping & Survey Drones
- Defense & Industrial UAV Platforms

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IOT-BASED HEATER CONTROL PLATFORM

PRODUCT OVERVIEW

The Smart Geyser IoT Board is a compact ESP32-based PCB designed to retrofit or integrate with standard electric water heaters. It enables complete wireless control, real-time monitoring, and intelligent automation — all managed through a dedicated Android application.

Ideal For:

Residential apartments & villas
Commercial guest houses & hotels
OEM geyser manufacturers

KEY SPECIFICATIONS

Microcontroller ESP32 (Dual-core, Wi-Fi + BT)
Connectivity Wi-Fi 802.11 b/g/n | Bluetooth 4.2
Input Voltage 5V DC (USB) / 3.3V regulated
Load Control High-power relay (up to 16A / 250V AC)
Temp Sensor DS18B20 / NTC Thermistor
App Platform Android (APK / Play Store)
Protocol MQTT over Wi-Fi
Form Factor Compact PCB — fits inside geyser enclosure

FEATURES

Android App Control Full remote ON/OFF control via dedicated Android app over Wi-Fi. Works on local network and internet.	**Temperature Monitoring** Real-time water temperature display on the app. Set custom target temperatures with automatic cut-off.	**Push Notifications** Instant alerts when geyser reaches target temp, trips due to overload, or connectivity is lost.
Energy Efficient Intelligent relay control prevents overheating. Reduces unnecessary power consumption significantly.	**Safe & Secure** Thermal overload protection, dry-heat cut-off, and secure encrypted Wi-Fi communication.	**Easy Integration** Designed for retrofit & OEM. Fits standard geyser enclosures. Minimal wiring required.

ANDROID APP

STEP 1	STEP 2	STEP 3	STEP 4
Install Board Mount PCB inside geyser. Connect relay & temp sensor.	Power & Pair Connect to power. Scan QR or enter Wi-Fi credentials in app.	Open App Launch SmartGeyser app on Android. Device auto-detected.	Control & Monitor Toggle geyser, view temp, receive alerts — from anywhere.

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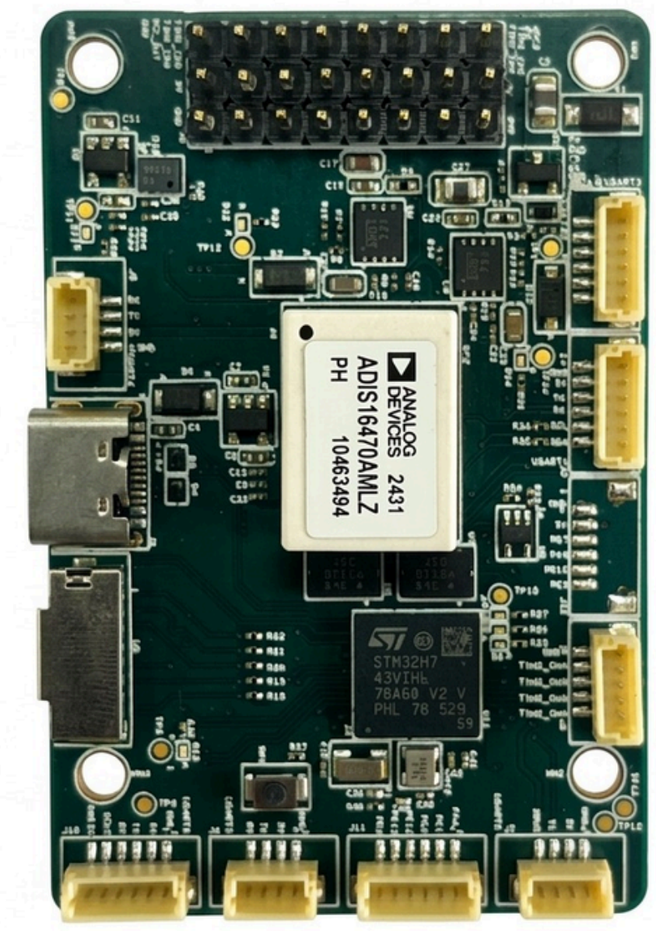
X PRO AND X1 PRO FLIGHT CONTROLLER FOR DRONES

A high-performance STM32-based Flight Controller designed for advanced UAV applications. Built around the powerful STM32H743VIH6 microcontroller, this system delivers ultra-fast processing, precise sensor fusion, and seamless connectivity for stable and responsive flight.

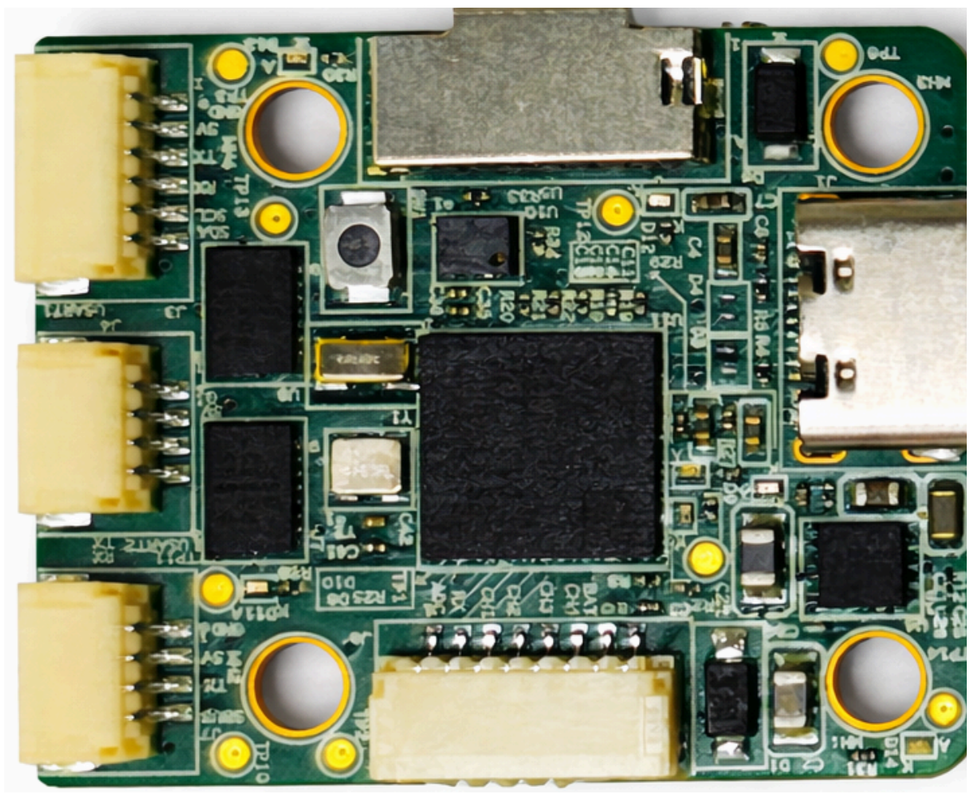
FEATURES

- Main MCU: STM32H743VIH6 (High-performance ARM Cortex-M7)
- Dual IMU Setup:
  - Primary + Secondary IMUs for redundancy (BMI088 sensors)
- Barometer: SPL06 for altitude measurement
- External Memory: W25Q128 QSPI Flash for logging & firmware
- Storage: MicroSD card interface (SDMMC)
- Communication Interfaces:
  - UART (GPS, telemetry, SBUS)
  - USB Type-C (configuration & firmware flashing)
- PWM Outputs: Dedicated motor control channels



Power Management System

- Wide Input Range: Supports 2S–6S LiPo battery
- Multi-rail Outputs:
  - 5V (3A) for peripherals
  - 9V/10V for camera systems
  - 3.3V regulated rails for MCU & sensors
- Battery Monitoring:
  - Voltage & current sensing via ADC inputs
- Protection Features:
  - TVS diodes, reverse polarity protection, filtering



Applications

- FPV Racing & Freestyle Drones
- Autonomous UAVs
- Mapping & Survey Drones
- Defense & Industrial UAV Platforms

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WIFI & BLE COMBO MODULE

The Wi-Fi & BLE Combo Module is a compact and high-performance wireless solution designed for modern IoT applications.
It integrates both Wi-Fi and Bluetooth Low Energy (BLE) connectivity in a single module, enabling seamless cloud communication and local device interaction.
Built using the Beken BK7348 chipset, the module offers reliable performance, low power consumption, and easy integration for a wide range of smart devices.
It is ideal for applications such as home automation, smart appliances, wearable devices, and industrial IoT systems.

FEATURES

- Dual Connectivity (Wi-Fi + BLE)
  Supports Wi-Fi for cloud communication and BLE for local control and provisioning.
  Beken BK7348 SoC
- Integrated MCU with wireless stack for efficient processing and connectivity.
  2.4 GHz Wi-Fi Support
- Compliant with IEEE 802.11 b/g/n standards.
  Bluetooth Low Energy (BLE 5.0)
- Enables low-power communication with smartphones and peripherals.
  Onboard PCB Antenna
- Integrated antenna for compact design and simplified hardware integration.
  Low Power Consumption
- Optimized for battery-powered and always-on IoT applications.
  Multiple Interfaces
- Supports UART, SPI, I2C, PWM, and GPIO for flexible connectivity.
  Secure Communication
- Supports encryption and secure data transmission for IoT security.
  Compact Form Factor
- Small size suitable for space-constrained embedded designs.
  Easy Integration
- Pre-certified RF design reduces development time and complexity.

Applications

- Smart Home Automation – Enables control of lighting, switches, thermostats, and appliances via mobile apps and cloud platforms.
- Smart Appliances – Integration into devices like geysers, washing machines, and air conditioners for remote monitoring and control.
- Wearable & Portable Devices – Ideal for fitness trackers, health monitors, and battery-powered smart gadgets using BLE connectivity.
- Industrial IoT (IIoT) – Used in sensors, monitoring systems, and automation equipment for real-time data and cloud connectivity.

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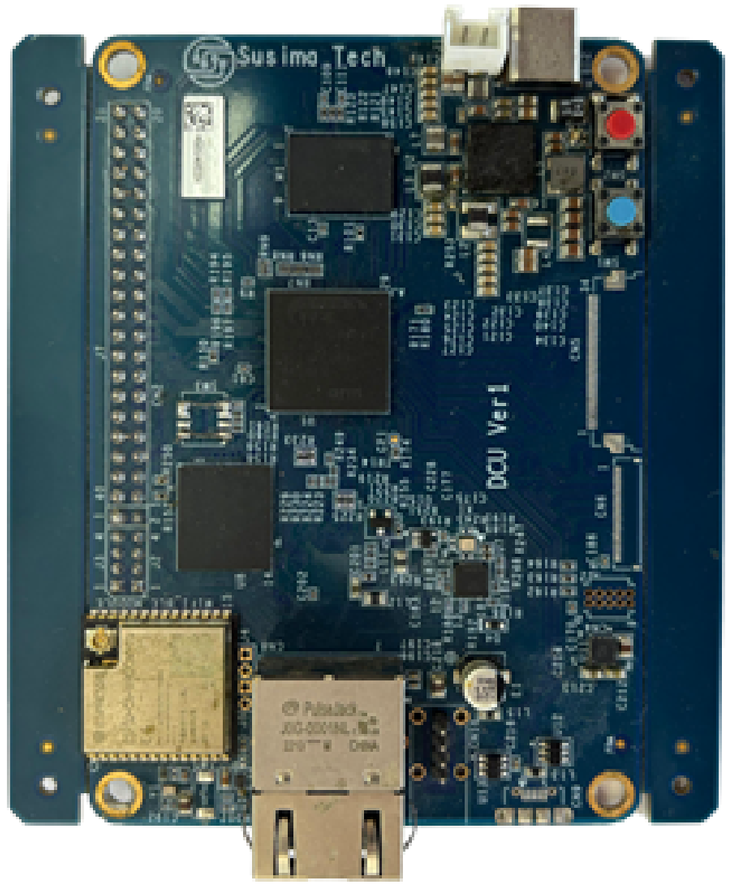
SINGLE BOARD COMPUTER (SBC)

- The Single Board Computer (SBC) is based on the R9A07G044L23GBG#AC0 (RZ/G2L) microprocessor from the Renesas RZ/G series, featuring a dual-core 1.2 GHz Arm Cortex-A55, a 200 MHz Cortex-M33 for real-time control, and a Mali-G31 GPU supporting 1080p @ 30 fps H.264 video.
- It supports up to 4 GB DDR4/DDR3L RAM, 128 Gbit eMMC flash (MTFC16GAPALBH-IT TR), and SD card storage. Power management is handled by RAA215300, integrating six buck converters and three LDOs.
- The board includes interfaces such as MIPI-CSI, MIPI-DSI, USB 2.0, Ethernet, and JTAG, along with a programmable 1 MHz–500 MHz clock generator. Wireless connectivity is provided by ESP32-C6-WROOM-1U supporting Wi-Fi 6 (2.4 GHz) and Bluetooth 5 LE with an external antenna option.



FEATURES

- Based on R9A07G044L23GBG#AC0 (RZ/G2L) microprocessor from the Renesas RZ/G series.
- Dual-core Arm Cortex-A55 processor running at 1.2 GHz.
- Arm Cortex-M33 processor at 200 MHz for real-time control tasks.
- Integrated Mali-G31 GPU for graphics acceleration.
- Supports up to 4 GB DDR4 / DDR3L memory.
- Supports SD card slot for external storage expansion.
- Provides JTAG interface for debugging.
- includes Ethernet interface for network connectivity.
- Integrated MIPI-CSI interface for camera connectivity
- Integrated MIPI-DSI interface for display connectivity.

APPLICATIONS

- CCTV edge processors
- Smart home hubs
- Industrial gateways
- Agriculture monitoring gateways
- Robot control interface panels

SPECIFICATIONS

- Power Input:15W
- Input Voltage: 5V
- UART for serial communication and debugging
- Camera and Display Connectivity
- Bluetooth (5.0 LE) and Wi-Fi (2.4GHz)
- SD card interface
- Ethernet
- USB 2.0 Interface

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BLE TAG

A BLE TAG is a smart device that leverages Bluetooth Low Energy (BLE) profiles to provide tracking and safety features. It typically implements the Battery Service to transmit the battery percentage of the tag to the connected smartphone, allowing users to monitor its power status in real time. For alerting functions, the tag uses the Immediate Alert Service, which supports different alert levels such as mild alert, small alert, and high alert. These alerts are communicated through BLE characteristics, and when triggered by the smartphone app, the tag can activate a buzzer, LED. Together, these services enable the tag to notify the user about proximity changes and ensure reliable anti-lost functionality while maintaining ultra-low power consumption.

FEATURES

- Uses Bluetooth Low Energy (BLE) for wireless communication.
- Supports real-time tracking and proximity monitoring
- Implements Battery Service to display battery level on smartphone
- Supports Immediate Alert Service for anti-lost notifications
- Provides multiple alert levels (mild, medium, high)
- Activates buzzer and LED alerts when triggered from mobile app
- Enables anti-lost device tracking functionality
- Designed for ultra-low power consumption
- Operates with coin-cell battery (e.g., CR2032) for long battery life
- Supports smartphone connectivity (Android / iOS)
- Includes on-board PCB antenna for BLE communication

APPLICATIONS

- Personal Item Tracking (keys, bags, wallets)
- Child & Elder Safety Monitoring
- Pet Tracking & Proximity Alert
- Asset Management in Warehouses & Offices

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BLE WRISTBAND

A Smart Wrist Band is a wearable device that uses Bluetooth Low Energy (BLE) to provide real-time monitoring and safety features. It typically implements the Battery Service to transmit the battery level of the wrist band to a connected smartphone, allowing users to track its power status easily. For alert and notification functions, the device uses the Immediate Alert Service, which supports multiple alert levels such as mild, medium, and high alerts. These alerts are communicated through BLE characteristics and, when triggered by the smartphone application, the wrist band can activate a buzzer, LED indicators, or vibration motor. Together, these services enable the wrist band to provide proximity alerts, safety notifications, and anti-lost functionality while maintaining ultra-low power consumption suitable for wearable applications.

FEATURES

- Replaceable band design allows the disposable strap to be changed while reusing the main beacon body, making the device cost-effective and recyclable.
- Includes an SOS emergency button that enables users to quickly send alerts and request assistance when needed
- Suitable for real-time personnel monitoring and tracking in locations such as checkpoints, airports, hospitals, schools, railway stations, factories, residential communities, shopping malls, and stadiums
- Each wristband has a unique MAC Address, Major ID, and Minor ID for reliable identification and tracking.
- Device parameters can be customized based on application requirements.
- Designed using Bluetooth Low Energy (BLE) technology for low power consumption and long battery life.
- Compact, lightweight, and suitable for wearable safety and tracking applications.

APPLICATIONS

- Student attendance and safety tracking in schools
- Child safety tracking in public places and schools
- Emergency alert systems using SOS button support
- Elderly care monitoring in smart healthcare systems

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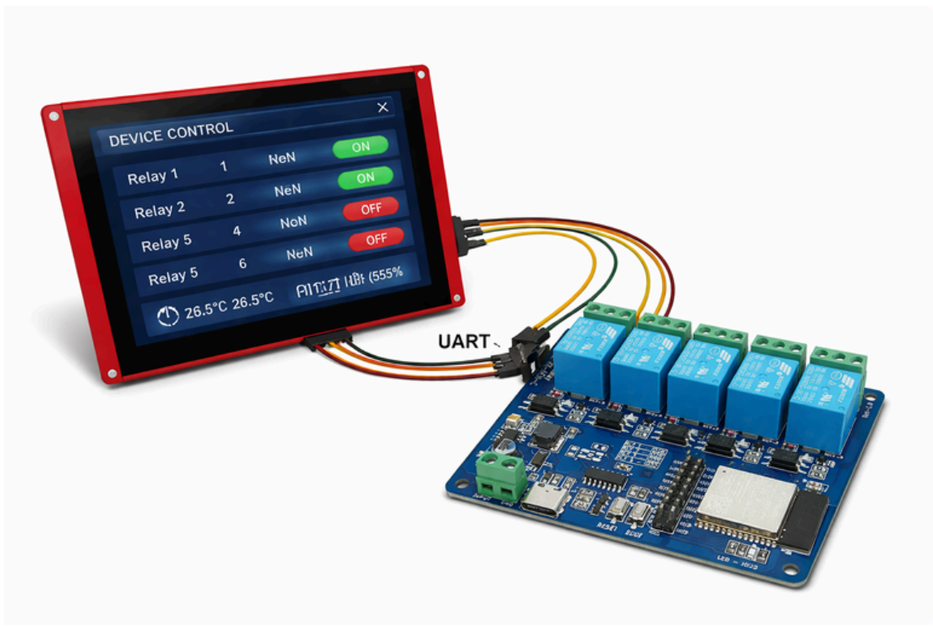
DQR UPI BASED PAYMENT GATEWAY DEVICE

The DQR (Dynamic QR) UPI-Based Payment Gateway Device is a smart, embedded solution designed to enable fast, secure, and contactless digital payments. It dynamically generates QR codes for each transaction, allowing customers to pay instantly using any UPI-enabled mobile application. With real-time confirmation, cloud connectivity, and seamless integration capabilities, the device enhances payment efficiency while reducing manual errors, making it ideal for modern retail and IoT-based payment ecosystems.

FEATURES

- Dynamic QR Code Generation
- Generates transaction-specific QR codes with amount and merchant details, reducing manual entry errors.
- UPI Integration
- Supports all major UPI apps (Google Pay, PhonePe, Paytm, BHIM) for seamless payments.
- Real-Time Payment Confirmation
- Instant transaction status via display, LED indicators, or buzzer alerts.
- Cloud Connectivity
- Supports Wi-Fi / BLE / 4G (LTE) for reliable communication in different environments.
- Secure Transactions
- End-to-end encryption with compliance to UPI and banking security standards.
- Compact Embedded Design
- Low power consumption with optimized hardware for continuous operation.
- Display Interface (Optional)
- LCD/OLED screen for showing QR codes, amount, and transaction status.
- Battery Backup Support
- Ensures uninterrupted operation during power failures.
- API & Backend Integration



APPLICATIONS

- Vending Machines
- Affordable digital payment solution without POS machines.
- Parking & Toll Systems
- Automated fee collection using dynamic QR.
- Public Transport & Ticketing
- Bus, metro, and event ticket payments.

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