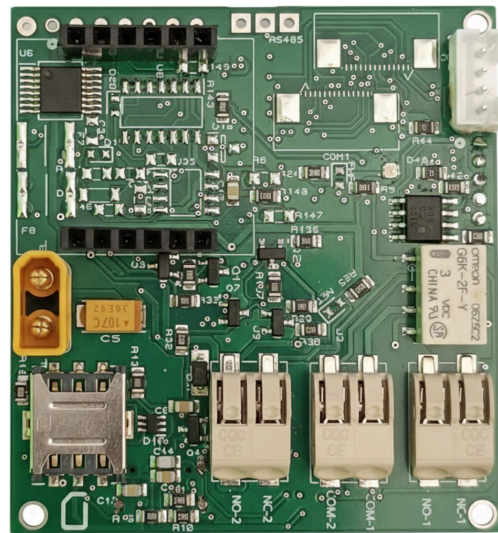


TECHNICAL DATASHEET

AITHA Core

Reusable technology base for connected products



Type:
Technical datasheet

Product:
AITHA Core

System:
AITHANEX

Audience:
Engineering, installation, integration and support

Document version:
1.0

Revision date:
2026-10-04

Product type

Reusable technology base for connected products.

It brings together connectivity, positioning, activity logging, remote updates and communication with the platform.

Role within the system

AITHA Core allows connected products to be developed on a common architecture.

It avoids redesigning electronics, firmware, connectivity and remote operation for every new device.

Technical capabilities

Base operation:

- Cellular, Wi-Fi and Bluetooth connectivity depending on the product design.
- GPS positioning when the use case requires it.
- IMU integration and other signals defined per product.
- Local logging for operational continuity without connectivity.

Continuity and maintenance:

- Publication of telemetry, states and events to AITHANEX or an external platform.
- Remote firmware update with an A/B OTA scheme and automatic rollback.
- Remote operation with commands and configuration depending on the deployment.
- Connectivity failover between mobile network, Wi-Fi and Ethernet when the interface is available.

Functional architecture

- Modular IoT platform.
- Independent services that can be enabled by configuration.
- Watchdog for the system and for critical services.
- Local persistence in NVS.

Connectivity

- LTE Cat-1 modem from the SIMCom A767xx family.
- Dynamic APN configuration.
- Integrated GNSS depending on the hardware version.
- Wi-Fi IEEE 802.11 b/g/n with automatic reconnection and RSSI monitoring.
- Bluetooth Low Energy for configuration and remote control depending on the deployment.
- Optional Ethernet via W5500 SPI, Fast Ethernet 100 Mbps, auto-negotiation, DHCP and link detection.

GNSS and positioning

- Supported constellations: GPS, GLONASS, Galileo and BeiDou.
- Continuous tracking depending on configuration.
- Persistence of the last valid position.
- Configurable motion detection.

Sensors and events

- Integrated IMU with accelerometer and gyroscope.
- Detection of impact, vibration, movement, rotation and lifting or tampering.

Inputs, outputs and protocols

- Configurable digital inputs.
- Optional analog inputs.
- Digital outputs.
- Safe relay with protected control.
- Protocols: MQTT, HTTP, HTTPS, REST API, Modbus RTU/TCP, CAN Bus and RS485.

Power supply

- Nominal input of 12 V.
- Range of 7 to 60 VDC with the corresponding power accessory.

Products that use the base

- **Router LoRa**: link from LoRa nodes to AITHANEX.
- **AITHA Protection**: asset security with movement, impact or tampering events.
- **OSHTIA EV Charger**: connected EV charging with remote operation and data reporting.
- **AURA X36**: gateway for distributed signals and sensors with extended, specific hardware.

Use scenarios

- Routers and communication gateways.
- Asset security devices.
- Electric vehicle chargers.
- Equipment with telemetry.
- Products that need positioning, logging and connectivity.
- Solutions integrated with **AITHANEX**.

References

- AITHA Core: <https://aitha.es/en/aitha-core/>
- Router LoRa: <https://aitha.es/en/products/lux-aitha/technical/>
- AITHA Protection: <https://aitha.es/en/products/aitha/technical/>
- OSHTIA EV Charger: <https://oshtia.com/en/docs/ev-charger/>
- AURA X36: <https://aitha.es/en/products/aura-x36/technical/>
- AITHANEX: <https://aitha.es/en/platform/>