

IoT Gateway

MULTIPLE OPTIONS

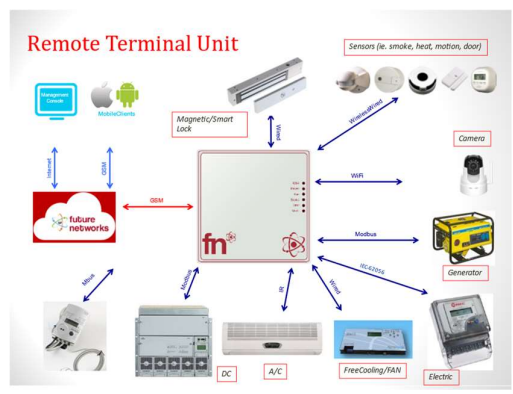
- Z-Wave
- Zigbee
- Modbus
- MBus
- IEC-62056
- SNMP
- Digital I/O
- Relay
- Wi-Fi
- Ethernet
- Bluetooth
- RF – Lora
- GSM

RF-LORA SUPPORT

For the remote sensor communication requirement, RF communication standard Lora is used up to 2km distance.

REMOTE MANAGEABLE

Remote support can be provided by using remote management unit, sensors can be monitored and their firmware can be upgraded.



- Digital I/O
- USB
- RS485 / RS232
- Relays (250V)
- Ethernet, Wi-Fi , 2G/3G
- Z-Wave wireless control module
- Linux operating system
- Real-time clock, watchdog timer
- Port extenders via RS485/Ethernet
- 5V / 12V DC Power Supply

The IoT Gateway is designed to meet the diverse connection requirements of different industries. This implies flexibility in terms of communication protocols and interfaces to accommodate various devices and sensors commonly used in different sectors.

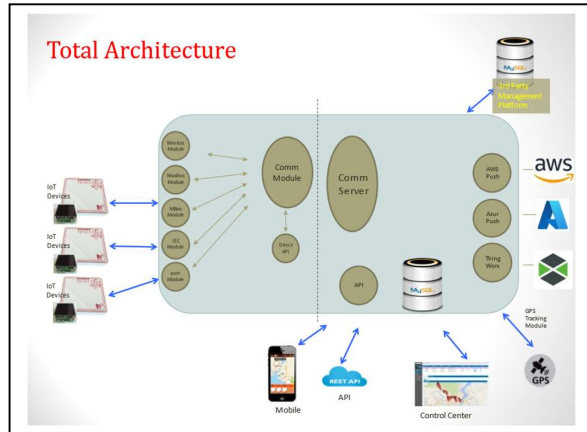
The design of the IoT Gateway suggests scalability to accommodate future advancements in technology or additional features. This adaptability is essential in the fast-evolving landscape of IoT and construction industry technologies.

The IoT Gateway can seamlessly integrate data from multiple sources and various sensors.

- Cloud based server platform
- IoT Terminals
- iOS/Android Mobile Application
- Web Control Center
- RESTful API
- User profiles
- Real-time monitoring
- Logging and reporting
- Smart phone based, field team tracking
- Instant notifications with Push, SMS and e-mail messages
- Azure, ThinkWorx, BoxBilling integration



Reliable IoT Architecture



- Industry standard Linux platform
- Multiple module configuration for different types of device connections
- Wired and wireless connection options for local devices and sensors
- Ethernet, WiFi, GSM or RF connection options for cloud connection
- Multi-process software architecture for reliability
- Fast inter-process-communication architecture for speed and energy efficiency

Linux based IoT gateway, supports various types of protocols, communication media and cloud connection options to meet diverse requirements of industries.

Alarm Mod for Each Sensor

- if value is between the limits
- if value is not between the limits
- if value is equal to max
- if value is equal to min
- if value is not equal to min

Time-out for Each Alarm

Value - if duration is higher than time out limit

Configuration by Cloud

- Command on
- Command off
- Flash level
- Flash length
- Sleep time – OK
- Sleep time – Error case
- Sleep camera
- Camera frame size
- Camera frame quality
- Camera frame format
- Camera image rotate degree
- Camera target coordinates
- Camera digit coordinates

Wired and Wireless Sensors

Wireless	Wired
Temperature and humidity	Temperature and humidity
Smoke	Angle
Motion	Motion
Door status	Door status
Key box/Door lock control	Door lock control
Air/condition control	Flood
Power switch	Distance
-On/off control	
Flood	

Sample Configuration

```
# module configuration
+module=modbus1
-device=192.168.2.220
-mode=master
-protocol=modbus
-node=0
-net=0
-interface=ip
-unit=rtu6, 1
-unit=REF615,2
```

```
# module configuration
+module=lora1
-mode=slave
-device=/dev/ttyS0
-protocol=modbus
-node=0
-net=0
-interface=lora
-disable=1
```

Alarm Configuration

The screenshot shows the 'Alarm Configuration' interface. It includes a table for 'Sensors' with columns for 'Sensor ID', 'Alarm Mod', 'Time-out', and 'Value'. The 'Alarm Mod' dropdown is set to '2' (if value is not between the limits). The 'Time-out' dropdown is set to '10' (if duration is higher than time out limit). The 'Value' field is set to '10'. The interface also includes a 'Summary' section with fields for 'Sensor ID', 'Alarm Mod', 'Time-out', and 'Value'. At the bottom, there is a 'Command' section with a text area for entering commands and buttons for 'Cancel' and 'Update'.