Gateway

Hi,

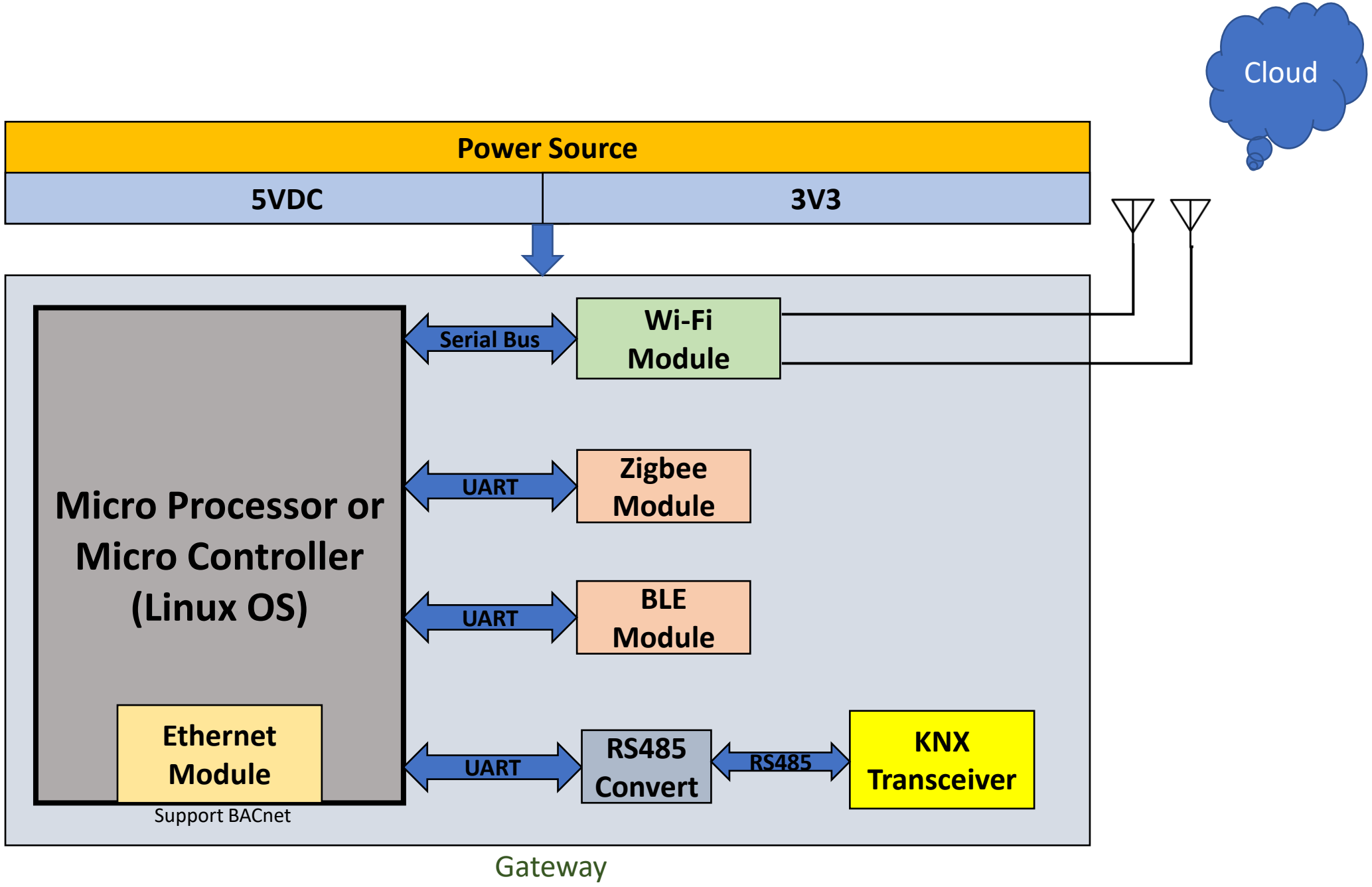
We need to design the Gateway, all related requirement/feature information's are explained as below. Kindly check our requirement/application and advise accordingly.

This is one of the most important Project, We need your support to built efficient product.

1. Kindly Suggest the suitable and right module/IC (EVM board should be available with supporting design documents) which is available with you ,

- Microprocessor / Microcontroller
- WiFi Module/Chip
- Bluetooth
- Zigbee
- KNX Transreceiver
- Ethernet driver, if not built in feature with Processor/Controller.

2. Could you support us for all the time like Schematic Review, Layout/Gerber review, Suggestions/Recommendations wherever required?


Cloud
Power Source
5VDC
3V3
Micro Processor or Micro Controller (Linux OS)
Serial Bus
Wi-Fi Module
UART
Zigbee Module
UART
BLE Module
Ethernet Module
Support BACnet
UART
RS485 Convert
RS485
KNX Transceiver
Gateway

Overview:

- PFA the Block Diagram.
- Gateway is designed to bridging between cloud and end devices operating via WiFi, Zigbee, BLE and KNX channels.
- Ethernet should also supports for BACnet IP to transreceive the Messages.

- Application: Home/Building Automation, Industry Automation, etc.

- Proto: 50 units
- Production: 10K, 50K
- Production Plan: January 2022

- Operating Temperature: to work between temperatures of -40’C and 85’C and humidity of 5% to 97%
- Sufficient thermal insulation and power surge protection must be provided
- Must be UL certified and RoHS certified.

Technical Specifications;

1. Microprocessor / Microcontroller:

- Should work with Linux OS
- Communicate with/over BLE/BLE Mesh devices, WiFi/WiFi Mesh devices, Zigbee devices.
- Communicate with KNX devices include Sensors, actuators, supported devices
- Communicate over Ethernet, should support BACnet IP.
- MQTT Client libraries and AES libraries

Security:

- Must support secure-boot with OTPROM based core root of trust
- Build procedure to sign the bootloader OS and application binaries with a RSA private key.
- Secure boot verification by establishing chain of trust from OTPROM till application layer.
- OS should be Secure Linux.
- Storing passwords, user names, keys in a secure storage

2. WiFi Module/Chip:

- Should support WIFI 802.11 a/b/g/n (ac optional)
- Network range should be maximum as possible. Kindly advise how to achieve.
- One Antenna should be sufficient or dual Antenna required?

3. Bluetooth:

- Should support Bluetooth (BLE 5.0)
- Range should be maximum as possible. Kindly advise how to achieve.
- On board PCB Antenna Sufficient or External Antenna required?

4. Zigbee:

- Should support ZigBee 3.0 (HA 1.2)
- Range should be maximum as possible. Kindly advise how to achieve.
- On board PCB Antenna Sufficient or External Antenna required?

5. KNX Transreceiver:

- Should support KNX over IP
- Should natively support KNX over Twisted Pair
- Should have UART/RS485 for communicating with Processor/Controller.

6. **Ethernet:**

- It can be a inbuilt feature with Processor/Controller, suggest if external driver required. Should support BACnet IP.