Industrial IoT Environment Sensor

Model: EVS-101 With Temperature, Humidity and Room Pressure Sensor Logging.

System Feature

- Wi-Fi/Ethernet Connected Industrial IoT Device
  - Once system power up, it will auto create a persistence connection to the server without user intervention.
  - Server can be placed either at public cloud, private cloud or LAN.
  - Device able to work behind firewall.
- Network link with MQTT Broker Server
  - Open Standard protocol and readily available either using paid version or free version of MQTT Broker Server.
  - Messaging format based on JSON format.
  - JSON messaging format is supported by various programming language and easily integrated to any existing system.
- Direct link with USB Connection
  - The device also can be configured to use USB Connection without connecting to the network.
  - Suitable for direct connection with PC/Host system locate beside the device.
  - Just add an extra JSON layer of wrapper to wrap around the same JSON messaging standard used in the MQTT Broker Server communication.
  - Thus provide an easy path for future system expansion, from localized system architecture to network-based system architecture.

- Device's sensors with MEMS
  - Build in with Micro-electromechanical systems sensors (MEMS) technology
  - Highly accurate and fully digital output direct from the sensors.
  - Sensors are calibrated and accuracy are guarantee by sensor manufacturer.
- TFT display
  - Colorful TFT display design
  - Eye-caching of the sensor reading from a far.

- Auto fetch real time clock from Internet Time Server.
    - Auto connect with the Internet Time Server to fetch the Real time value (EPOC Time) when network is connected and internet link is available.
    - Manually set time by server if internet link is not available.
    - Auto readjust the time drift periodically.
    - Append the EPOC time to all the message.
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- Easy setup and configuration
    - System configures with Android Apps.
    - Provide detail device properties, E.g., model number, version number, etc.
    - Connectivity selection either using Wi-Fi, Ethernet or USB Link.
    - Upload WPA Enterprise Server private/public key.
    - Server IP/Domain Name Setup.
    - DHCP/Fix IP.
    - Internet Time Server Setting.

Specification

Power and Enclosure Specification

Input Voltage	DC 5V USB-C Connector
System Power Consumption	5W Max
Operation Humidity	10%-95%RH
Operation Temperature	25°C to 85°C
Storage Humidity	10%-95%RH
Storage Temperature	0°C to 85°C
Enclosure Dimension	59mm (W) x 88mm (L) x 37mm (H) (Exclude sensor wire and mounting hook, 109mm(L) with mounting hook)
Enclosure Type	ABS and Acrylic

Sensors Specification

Temperature and Humidity Sensor	Model SHT-40 By Sensirion
Temperature Accuracy	Up to ±0.1°C
Relative Humidity Accuracy	Up to ±1.5%RH
Operating Range	0~100%RH, -40~125°C

Pressure Sensor	Model BMP280 By Bosch Sensortech
Pressure Absolute Accuracy	±1mBar @950mBar~1050mBar, 0°C ~40°C
Operating Range	300mBar~1100mBar

Wi-Fi Specification

Frequency	2.4Ghz~2.5Ghz
Supported Wi-Fi Protocol	802.11 b/g/n
Antenna Type	Internal
Security Protocol	WPA/WPA2 personal, WPA/WPA2 Enterprise
Encryption Protocol	WEP/TKIP/AES

Ethernet Specification

Speed	RJ45, 10/100 Mbps

USB Type-C Port Specification

Supported Protocol	USB Virtual Comm Port
Baudrate	115200 Baud, 8bit, no-parity, 1 stop bit

Backend Server Connectivity

Server Connection	MQTT Broker with TCP, TCP-TLS, Web-Socket Connection
Server Port	User Definable
Encryption/Security	Public CA, Self-Signed Certificate
Messaging Format	JSON
Other	NTP auto RTC update

Device Outer Dimension