

WISE-1510

M2.COM LoRa IoT Node

NEW



Features

- ARM Cortex-M4 Core Processor
- Compatible to support public LoRaWAN or LoRa private networks
- Great for Low Power Wide Range applications
- Rich interfaces for sensor and I/O control
- Support wide temperature -40 ~ 85 °C

Introduction

WISE-1510 is M2.COM standardized IoT Sensor Node integrated with ARM Cortex-M4 Processor and LoRa transceiver. LoRa technology is the great for Low-Power Wide-Area Network (LPWAN) Applications such as Smart Cities, Agriculture, Metering, Street Lighting and Environment Monitoring. With optimization on the power consumption and wide range, your sensors or applications with low data rate requirement can be achieved years battery lifetime and kilometers long distance connection. Based on the deployment, WISE-1510 is flexible to support either public LoRaWAN network or private LoRa Eco-system.

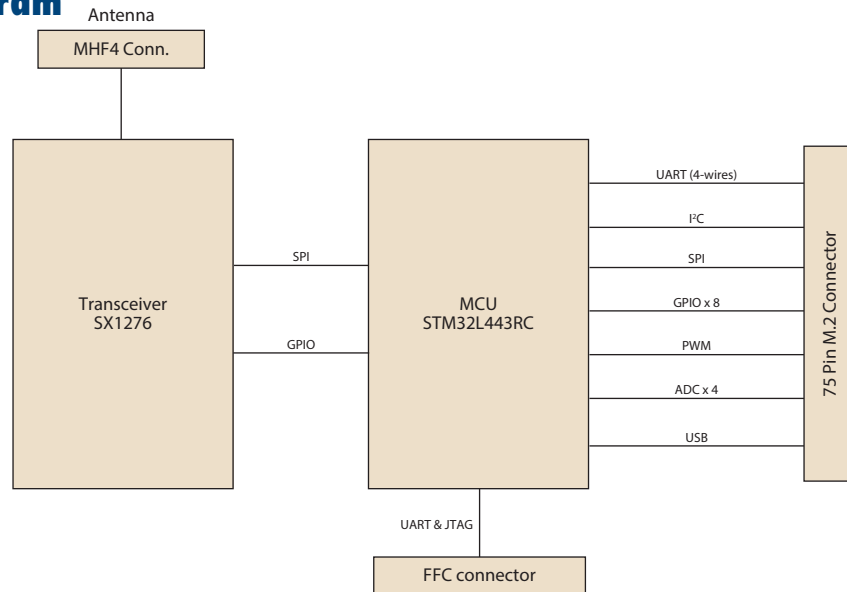
Advantech WISE-1510 also provide multi-interfaces for sensor and I/O control. With ARM mbed embedded microprocessor operating system and add-on software stacks, it's convenient to support IoT communication protocols including LWM2M, CoAP and MQTT with WISE-3610 LoRa IoT Gateway. Data can be quickly and easily acquired and transformed into a different format to communicate with WISE-PaaS, mbed Cloud or other cloud services. Developer can build their application backbone faster and focus on their applications, value-added services.

Specifications

| | | |
|----------------------|--|--|
| Processor System | CPU/MCU | STM ARM Cortex-M4 Processor |
| | RAM | 64KB |
| | Flash | 256KB |
| Form Factor | | M.2 TYPE 2230-D3-E |
| Wireless Network | Standard | LoRaWAN / LoRa Private Network (WISE-Link) |
| | Frequency Band | 863-870MHz for Europe (LoRaWAN / LoRa Private Network w/ WISE-3610) |
| | | 902-928MHz for North America (LoRaWAN / LoRa Private Network w/ WISE-3610) |
| | | 920-928MHz for Japan (LoRa Private Network w/ WISE-3610) |
| | | 470-510 MHz for China (support later) |
| | 915-928MHz for Australia (support later) | |
| | Channels | Spreading Factor: 7 ~ 12 |
| | Topology | Star network |
| | Transmit Power | Up to +18dBm |
| Receiver Sensitivity | Up to -136dBm at SF = 12 / 125KHz | |
| RF Data Rate | 50 kbps at FSK mode for Europe | |
| | 21.9 kbps at SF7 mode for North America | |
| | 5.47 kbps at SF7 mode for Japan | |
| Function | End node | |
| Antenna connector | MHF4 connector | |
| Ethernet | | - |
| Cellular | | - |
| GPS | | - |
| I/O Interface | UART | UART 1 (4-wire, support RTC/CTS) |
| | CANbus | - |
| | I ² C | 1 |
| | I ² S | - |
| | GPIO | 8 |
| | PWM | 1 |
| | SPI | 1 |
| | ADC | 4 |
| USB | 1, device only | |
| Programing Port | | - |

* Note: The frequency support of other regions can be checked for further plan.

Block Diagram



Specifications Cont.

| | | |
|----------------------|-------------------------|--|
| Debug Port | | 1 develop and debug with WISE-ED20 |
| Watchdog Timer | | - |
| Indicator and Button | LED | - |
| | Button | - |
| | Serial Port | - |
| | Switch | - |
| | SD Socket | - |
| | USB Port | - |
| Expansion | SIM Socket | - |
| | Mini PCIe Socket | - |
| Power | Power Supply Voltage | 3.3V |
| | Power Consumption | TBC |
| Environment | Operational Temperature | -40 ~ 85° C |
| | Operating Humidity | 5% ~ 95% Relative Humidity, non-condensing |
| Mechanical | Dimensions (W x D) | 22 x 30 mm |
| | Mounting | - |
| | Weight | 3g |
| Operating System | | mbed OS 5.2 |
| Certification | | CE/FCC/IC/TELEC/VCCI |

Ordering Information

| Part No. | Description |
|--------------------|------------------------------------|
| WISE-1510WMB-SDA1N | WISE-1510 M2.COM LoRa module-NA915 |
| WISE-1510WMB-SDA1E | WISE-1510 M2.COM LoRa module-EU868 |
| WISE-1510WMB-SDA1J | WISE-1510 M2.COM LoRa module-JP923 |

Optional Accessories

| Part No. | Description |
|-------------------|--|
| WISE-DB1500-01A1E | M2.COM evaluation carrier board |
| 1750008598-01 | Sub G antenna Dipole L=195mm, 1dBi 902~928 MHz |
| 1750008599-01 | Sub G antenna Dipole L=195mm, 1dBi 863~870 MHz |
| 1750008569-01 | Antenna Cable SMA to MHF4 L=300mm |
| 1700015038 | FPC Cable 10P-0.5mm 7.9cm for DCU2.0 |
| 9696WED200E | ASS'Y WISE-ED20 A101-1 M2.COM Daughter |
| 1931000590 | Screw M2.5x5L F/S D=5.3 H=0.8 (1+) ST Ni |
| 1700023619-01 | A cable USB-A 4P(M)/micro USB 5P(M) 1m ADAM-T212 |
| 1700025876-01 | M cable USB-A 4P(M)/Plug-in 2P-5.0 90CM |
| XRISC-ADP-10HW-AG | ADP A/D 100-240V 10W 5V WM |
| 193A231540 | POST F=M3*6L M=M3*6L D=5 d=2.88 B=5 H=15 Cu |