

WISE-1570

M2.COM NB-IoT Sensor Node

NEW



Features

- ARM Cortex-M4 Core Processor
- Compliant with 3GPP R14 NB-IoT Standard
- Integrated with ARM Pelion Cloud Service
- Multiple Interfaces for Sensor and I/O Control
- Supports Wide Temperature: -40 ~ 85 °C

arm MBED



Introduction

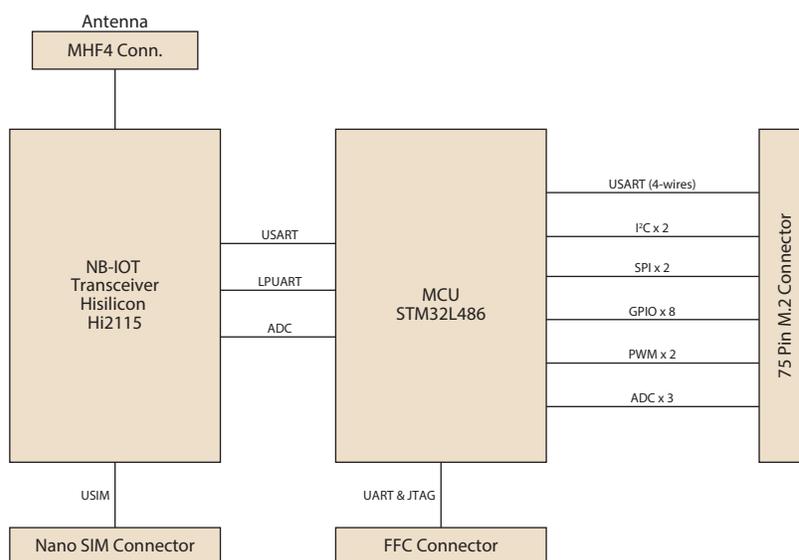
WISE-1570 is M2.COM standardized IoT Sensor Node integrated with ARM Cortex-M4 Processor and NB-IoT or LTE-M technologies. 3GPP (3rd Generation Partnership Project) has defined NB-IoT (CAT-NB1) the the 14th release. The purpose of the new standard is to fulfill the demand for IoT growth. NB-IoT focuses on the LPWA market with wide coverage, more connections, lower data rate and better power consumption. Telecoms are easier to build NB-IoT network with existing LTE infrastructure. This new standard expedites IoT development in China, Asia, Europe, and the United States.

Advantech WISE-1570 also provides multiple interfaces for sensor and I/O control. With an ARM mbed embedded microprocessor operating system and add-on software stacks, it's conveniently supports IoT communication protocols including LWM2M, CoAP and MQTT-SN to NB-IoT service network offered by telecom companies. Data can be quickly and easily acquired and transformed into a different format to communicate with ARM Pelion Cloud or other cloud services. Developers can build their application backbone faster and focus on their applications and value-added services.

Specifications

Processor System	CPU/MCU	STM ARM Cortex-M4 Processor
	RAM	128 KB
	Flash	1024 KB
Form Factor		M.2 TYPE 2230-D3-E
Wireless Network	Standard	3GPP R14 NB-IoT
	Frequency Band	B1: 2100MHz; B3: 1800MHz; B5: 850MHz; B8: 900MHz ; B20: 800MHz; B28: 700MHz
	Modulation	BPSK and QPSK
	Topology	Star Network
	Transmit Power	Up to +23 dBm
	Receiver Sensitivity	-129dBm (MCS0, Nrep=128)
	RF Data Rate	100 kbps
	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	2
	I ² S	-
	GPIO	8
	PWM	2
	SPI	2
	ADC	3
USB	-	
Programing Port		-
Debug Port		1 develop and debug with WISE-DB1505
Watchdog Timer		-

Block Diagram



Specifications Cont.

Indicator and Button	LED	-
	Button	-
	Serial Port	1
	Switch	-
	SD Socket	-
	USB Port	-
Expansion	SIM Socket	1
	Mini PCIe Socket	-
Power	Power Supply Voltage	3.3V
	Power Consumption	PSM: 3.6uA, Idle: 4.7mA
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 5.11	
Certification	NCC, CE/FCC/SRRC Support Later	

Ordering Information

Part No.	Description
WISE-1570WMB-SDA1N	WISE-1570 M2.COM NB-IoT Sensor Node
WISE-DK1570-MBP00	WISE-1570 NB-IOT Starter Kit-Arm Pelion Cloud

Optional Accessories

Part No.	Description
96961505000	M2.COM evaluation carrier board
1750008303-01	Antenna LTE Full Band 700 ~ 960 MHz; 1710 ~ 2700 MHz
1750008761-01	Antenna Band 699~960 MHz
1750008569-01	Antenna Cable SMA to MHF4 L=300mm
1700015038	FPC Cable 10P-0.5mm 7.9cm
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