

WISE-1520

M2.COM Low Power Wi-Fi IoT Node

Preliminary



CE FCC RoHS

Features

- ARM Cortex-M4 processor
- RAM 256 KB memory / 1MB Serial Flash
- Built-in Low-power Wi-Fi connectivity
- Support 1 UART, 1 I2C , 1 SPI, 2 GPIO, 2 PWM, 2 ADC
- 22 x 30 mm M.2 key E

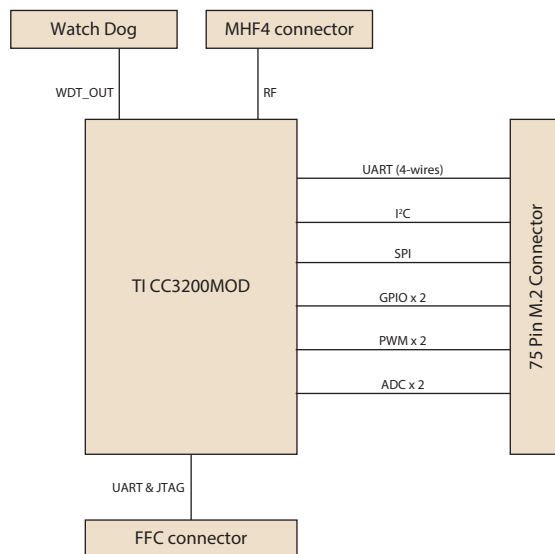
Introduction

WISE-1520 is the first wireless sensor node for M2.COM family. It's integrated with ARM Cortex-M4 Processor and low power Wi-Fi connectivity fully compatible with existing Wi-Fi infrastructure. It's convenient to build the industrial IoT applications environment with M2.COM compact design. WISE-1520 also offers certification ready to save RF testing costs and software development kit including sample code, sensor driver API, utility and RTOS for the embedded microprocessor operating system. With built-in WISE-Agent, WISE-1520 can communicate directly with WISE-PaaS/RMM Cloud platform for remote monitoring and management by widely-used IoT communication protocol – MQTT. Data can be quickly and easily acquired and transformed into a different format to communicate with WISE-PaaS or other cloud services. Developer can build their application backbone faster and focus on their applications, value-added services.

Specifications

Processor System	CPU/MCU	TI ARM Cotec-M4 Processor
	RAM	256KB
	Flash	1MB
Form Factor		M.2 TYPE 2230-D3-E
Wireless Network	Standard	IEEE802.11 b/g/n
	Frequency Band	2.412~2.472 GHz
	Channels	World Wide 13 Channels 1-11 with active scan, Channels 12,13 with passive scan
	Topology	Star network
	Transmit Power	17 dBm at 1 DSSS 17.25 dBm at 11 CCK 13.5 dBm at 54 OFDM
	Receiver Sensitivity	-94.7 dBm at 1 DSSS -87 dBm at 11 CCK -73 dBm at 54 OFDM
	RF Data Rate	UDP:16Mbps TCP: 13Mbps
	Function	End node
	Antenna connector	MHF4 connector
Ethernet		-
Cellular		-
GPS		-
I/O Interface	UART	1 4-wire(TX/RX/CTS/RTS)
	CANbus	-
	I ² C	1
	I ² S	-
	GPIO	2
	PWM	2
	SPI	1
	ADC	2 (1 for VCC voltage detect)
USB	-	

Block Diagram



Specifications Cont.

Programing Port		-
Debug Port		1 develop and debug with WISE-ED20
Watchdog Timer		1 TPS3820 WDT, 900ms time-out
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	MCU active at UDP full load: ave. 203mA at 3.33V
		Transmit sensor per 30 secs: ave. 12mA at 3.33V Hibernate With Real-Time Clock (RTC): ave. 41uA at 3.33V
Environment	Operational Temperature	-20 ~ 70° C
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D)	22 x 30 mm
	Mounting	-
	Weight	3g
Operating System		TI RTOS/mbed OS (coming soon)
Certification		CE/FCC Class B

Ordering Information

Part No.	Description
WISE-1520ITB-TDA1E	WISE1520 M2.COM Wi-Fi module with TI-RTOS -20 ~ 70° C

Optional Accessories

Part No.	Description
WISE-DB1500-01A1E	M2.COM evaluation carrier board
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm