

Wireless WiFi Gateway
(WSGWIX-110)



The WSGWIX-110 provides gateway functionality for the WiSense short range low power wireless sensor/actuator network (LPWMN). The WSGIX-110 has two major components.

WiSense LPWMN Coordinator Node

This node has a WiSense LPWMN Sub-GHz radio interfaced to a microcontroller. The coordinator node is responsible for starting and maintaining a WiSense LPWMN network comprising up to 64 wireless nodes (RFD or FFD). The coordinator and the nodes support half-duplex bi-directional communication.

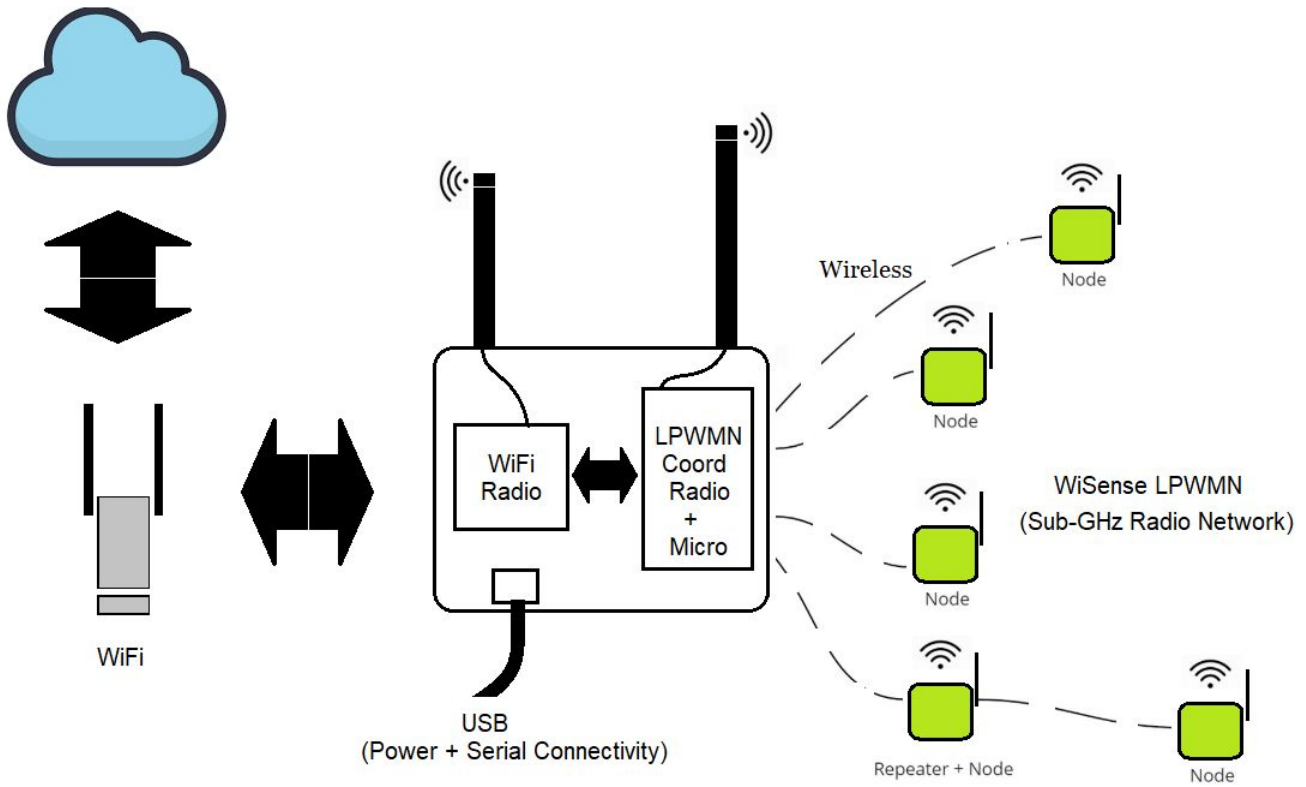
WiFi Radio

This radio connects the WiSense LPWMN to a WiFi network (to connect to local systems or to a remote cloud)

Features

- Can support up to 64 LPWMN wireless nodes (sensors nodes / routers)
- AC powered with Li-Ion battery backup
- WiSense LPWMN radio has external half wave dipole antenna
- WiFi radio has external half wave dipole antenna
- High quality IP67 enclosure
- Power and serial connectivity over USB

Block Diagram



WSGWIX-110 Gateway Block Diagram

WiFi Radio Specs

- 2.4 GHz Band
- 802.11 b/g/n
- 802.11 n up to 150 Mbps

WiSense LPWMN Coordinator

Microcontroller Specs

Texas Instruments MSP430F5419A

- 16-Bit Ultra-Low-Power RISC Microcontroller
- Up to 25-MHz System Clock
- 128KB Flash, 16KB RAM, 12 Bit ADC, 4 USCIs, 32-bit HW Multi, Multiple UARTS, SPI, I2C peripherals

Radio Specs

Texas Instruments Sub-1 GHz CC1101/CC1120 Transceiver

- Max Transmit Power: + 13 dBm (limited by FCC/ETSI/WPC rules)
- GFSK/2-FSK/4-FSK/MSK/ASK
- Antenna
 - Standard
 - Half-wave dipole antenna
 - Gain: +3 dBi
 - Length: 185 mm
- Range: Around 1 KM (line of sight)

Sub-GHz Radio Standards Compliance

Region	Operating Frequency Range	Certification
USA/Canada	902-928 MHz	FCC
EU	868-870 MHz	ETSI
India	865-867 MHz	WPC (Self Certified)

Power Supply Requirement

- +5 V / 2.0 Watts Over USB
- Customisable according to requirement

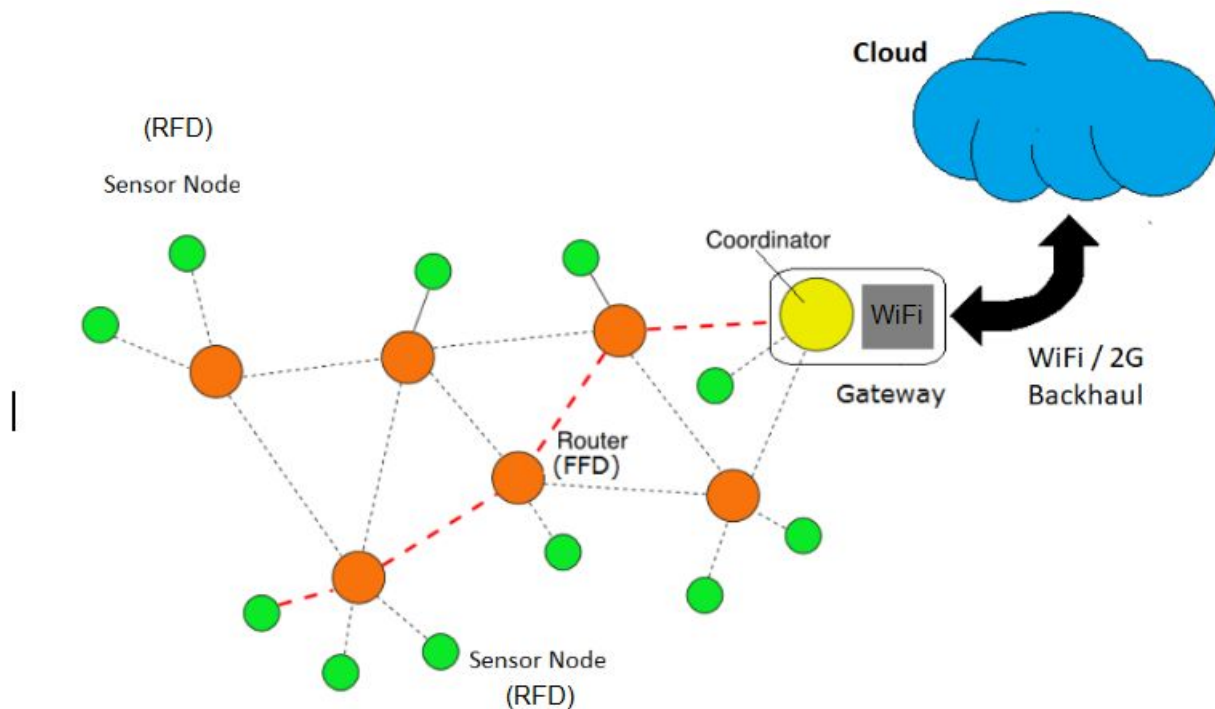
Internal Backup Battery

- Chemistry: Lithium Ion
- Capacity: 2200 mAH
- Voltage Range: 3.6V - 4.2V
- Form Factor: 18650

Enclosure

- Takachi IP67 Enclosure (151 mm x 111 mm x 41 mm)
- Other enclosure options available. Customizable according to requirement.

WiSense Wireless Mesh / Star Network Architecture



For more information on WiSense Sub-GHz LPWMN Coordinators, refer to the following datasheets.

- TI CC1120 Radio based Network Coordinator
[WSN1120CL](#)
- TI CC1101 Radio based Network Coordinator
[WSN1101ACL](#)

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