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 USClCs, 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

<table>
<thead>
<tr>
<th>Region</th>
<th>Operating Frequency Range</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA/Canada</td>
<td>902-928 MHz</td>
<td>FCC</td>
</tr>
<tr>
<td>EU</td>
<td>868-870 MHz</td>
<td>ETSI</td>
</tr>
<tr>
<td>India</td>
<td>865-867 MHz</td>
<td>WPC (Self Certified)</td>
</tr>
</tbody>
</table>

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

For any queries, contact:

contact@wisense.in  
No. 553/A , 9th A Main,  
1st Floor, Indiranagar 1st Stage,  
Bangalore - 560038  
Tel: +91-080-49545554

Web: https://www.wisense.in  
Blog: wisense.wordpress.com