What sets the OTC Wireless Sensor Network apart from the rest of the competition is its ability to utilize peer-to-peer (P2P) networking capabilities and increase the role of OTC Wireless Gateways in the wireless sensor network.

In a basic wireless sensor network, the OleumTech wireless gateway is tasked with aggregating data from up to 63 wireless transmitters that are connected to a variety of sensors, while interfacing with third-party SCADA and IoT controllers and platforms.

OleumTech engineered the OTC Wireless Sensor Network to be extremely flexible and powerful by implementing peer-to-peer communication functionality, which leverages how a gateway can be purposed and configured for overcoming automation and communication challenges. Multiple gateways may be populated in a single wireless network, enabling communication and control amongst all gateways in the network. With up to 1920 available Modbus registers per gateway and the ability to add multiple gateways per network, this feature is a true differentiator.

Here are some common application examples demonstrating the OTC Sensor Network’s peer-to-peer capabilities:

**EXAMPLE 1: Wireless Gateways as Repeaters or RF Range Extenders**

- **Transmiter(s) to Gateway:**
  - 900 MHz provides up to a 7500 ft RF range.

- **Gateway to Gateway:**
  - 1 Watt 900 MHz radio provides up to a 40-mile RF range with high-gain antennas.
  - Minimize the need for expensive long-haul radio infrastructure.
  - All OleumTech gateways are compatible over-the-air and can be peered.

<table>
<thead>
<tr>
<th>Local Controller</th>
<th>RTU/EFM/PLC/DCS/HMI/Long-haul Radio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gateway A</td>
<td></td>
</tr>
<tr>
<td>Gateway B</td>
<td>Gateway B Transmitter data is available at Gateway A.</td>
</tr>
<tr>
<td>Gateway C</td>
<td>Gateway C and D Transmitter data is available at Gateway A.</td>
</tr>
<tr>
<td>Gateway D</td>
<td></td>
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</tbody>
</table>

**APPLICATION NOTE**

The Power of Peer-to-Peer Communication Functionality in an OTC Wireless Sensor Network
EXAMPLE 2: Wireless Data Aggregation from Multiple Sites Using Wireless Gateways

Gateway B, C, D, and E Transmitter data is available at Gateway A.

EXAMPLE 3: Wireless Gateways as IO Controllers

Wireless I/O Capabilities
4-20 mA
0-10 V
Digital

Gateway A

Gateway B

Gateway C

Gateway D

Gateway E

Local Controller
RTU/EFM/PLC/DCS/HMI/Long-haul Radio

Digital Outputs
Digital Inputs
Analog Inputs
Analog Outputs

Pressure
Temperature
Flow, etc.
Arrival Sensors
Valve Position
ESD
Solenoids
Alarms

RS485 Modular I/O Expansion System
EXAMPLE 4: Rescue and Control Stranded Assets Utilizing Wireless Gateways

Gateway B polls Modbus registers from the Local Controller and peers data to Gateway A.

Gateway A

Write commands can be issued to Gateway A, then peered to Gateway B for remote control functionality.

LEARN MORE

For more information or for help solving wireless network and automation challenges, please contact an OleumTech representative today by phone at 1.949.305.9009 or by emailing sales@oleumtech.com