Theory and Terminology

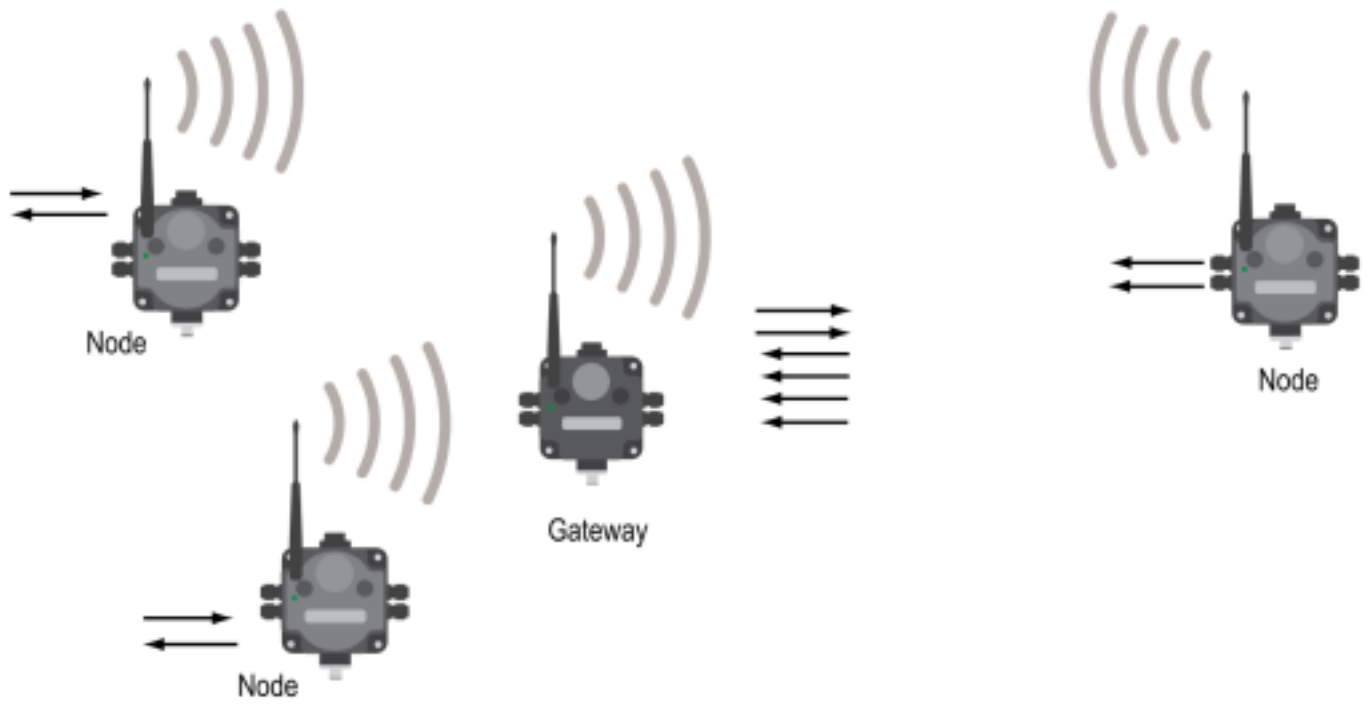
Gateways and Nodes

Every wireless network must have one Gateway, which schedules communication traffic and controls the I/O configuration for the network, and one or more Nodes.

A Gateway is the master device within each radio network. Similar to how a gateway device on a wired network acts as a "portal" between networks, the Sure Cross Gateway acts as the portal between the wireless network and the host controller. When the Gateway, using its Modbus RTU RS-485 connection, is a Modbus slave to a Modbus RTU host controller, the wireless network may contain up to 47 Nodes in a single wireless network. The Gateway holds the Modbus registers of all wireless devices within the network.

A Node is a wireless network end-point device used to provide sensing capability in a remote area or factory. The Node collects data from sensors and communicates the data back to the Gateway. Nodes are available in a wide variety of power or input/output options.

Gateways and Nodes



DXM Wireless Controller Series

The DXM Wireless Controller/Gateway/Edge device product family enables end-to-end IIoT solutions, connecting Banner sensors to Banner's Cloud Data Services (CDS) cloud platform. The DXM can push data to Banner CDS where it can be easily consumed with intuitive, customizable dashboards; it can log data for immediate or long-term analysis; and it can send instant alerts and alarms when corrective actions are needed.

DXM700 Wireless Controller

- DXM Controllers integrate Banner's ISM radio, cellular connectivity, and local I/O
- Users can program the DXM using action rules and ScriptBasic language, which can execute concurrently
- Log data on the Micro SD card
- Automation protocols include Modbus RTU, Modbus/TCP, and EtherNet/IP for communications with PLC's, HMI's, or other local hosts
- Interactive programmable user interface with LCD and LED indicators
- Industry-standard RS-485, Ethernet, and USB communication ports
- Easily interfaces with Banner CDS and other web-based service providers

The DXM products facilitate Ethernet connectivity and Industrial Internet of Things (IIoT) applications, including:

- Predictive Maintenance Monitoring: monitor equipment to detect problems early and avoid additional damage and unplanned downtime
- Environmental Monitoring: minimize material loss by monitoring temperature and humidity in climate-controlled areas
- Productivity Solutions: create call-for-parts/service and pick-to-light systems to increase productivity and reduce error

The DXM100-Bx and DXM150-Bx models can provide visual indication, email or text notifications, and collect and transmit data to a host system or to the cloud. As a communications gateway, the DXM100-Bx and DXM150-Bx series interfaces local serial ports, local I/O ports, and local ISM radio devices to the Internet using a cellular connection or wired Ethernet network connection.

The DXM100-Sx and DXM150-Sx Modbus Slaves can connect directly to an RS-485 serial bus or to a wireless ISM network as a remote Modbus Slave device.

Banner Cloud Data Services (CDS)