

OneWireless Server Specification Release 120

EP03-620-120, April 2009



Product Overview

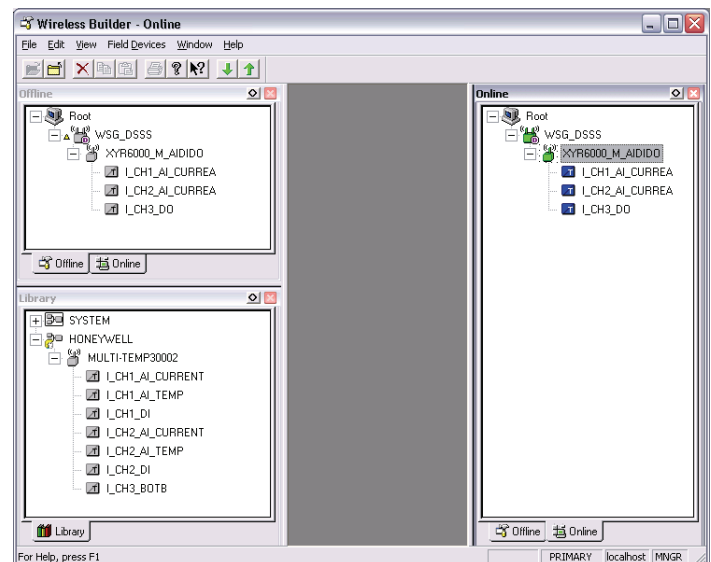
Honeywell offers a single multi-functional wireless mesh network that supports wireless field I/O devices (such as transmitters and actuators), Wi-Fi devices and other wireless-enabled applications. The network is composed of five interconnected components that allow plants to seamlessly connect wireless clients to the process control network. One of these components is the OneWireless server.

The OneWireless™ R120 server hosts the tools required to manage the wireless system. This includes managing the wireless mesh network that is formed by industrial access points, called multinodes, and wireless input/output devices. The server tools include:

- **Wireless Builder** - enables users to configure wireless transmitters and gateways and their associations. It can also be used to validate the online status of the wireless devices.
- **Key Server Manager** - provides user interface for generating and managing wireless security keys.
- **Directory Server** - automatically assigns Honeywell wireless network addresses for the multinodes and wireless server gateway (WSG) and the wireless transmitters, and maintains the fixed address range 0xFXXX for the WSG.
- **OLE for Process Control (OPC) server** - provides open access to all device data.
- **Network Management and Diagnostics Tool** - manages and monitors the mesh network, i.e. multinodes and leaf nodes (wireless transmitters).

Wireless Builder

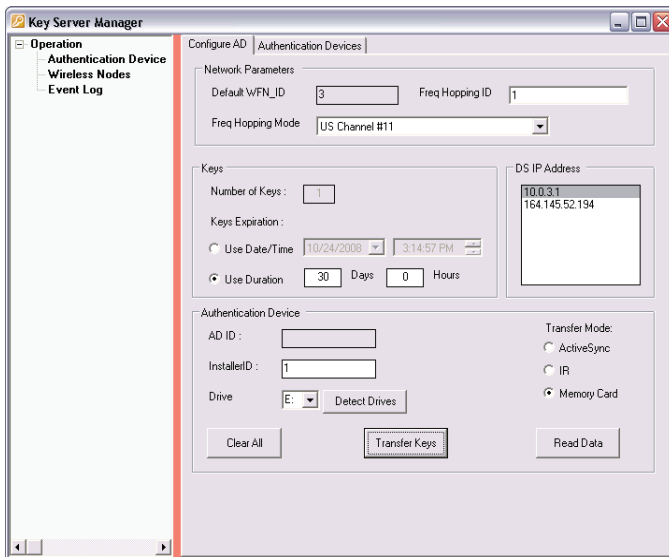
Wireless Builder enables users to configure, commission and load field devices such as wireless system gateways and wireless I/O devices. Users can either pre-configure the database prior to installing the authenticated field devices or simply commission the installed authenticated devices. Authenticated wireless field I/O devices automatically appear in the Wireless Builder. Configuring wireless field I/O devices truly is plug-and-play.



Key Server Manager

Wireless security is a primary concern for process control networks system administrators. In addition to the security features included in most commercial mesh networks, Honeywell has designed a highly secure infrared security key management system. Before a wireless transmitter or a multinode can join the wireless network, a security key must be communicated to the device through a handheld device with an infrared port hosting Honeywell authentication device software. All multinodes have an infrared port that allows a key to be

deployed to the device. Once a key is deployed to a device, it will automatically join the network. Deploying a key is only required once. The Key Server Manager provides the user interface for generating and managing the wireless security keys. With Release 120, users will be able to configure “rolling keys” on field devices, providing improved security. Field devices will obtain new security keys from the Key Server on a periodic basis.



Authentication Device Software

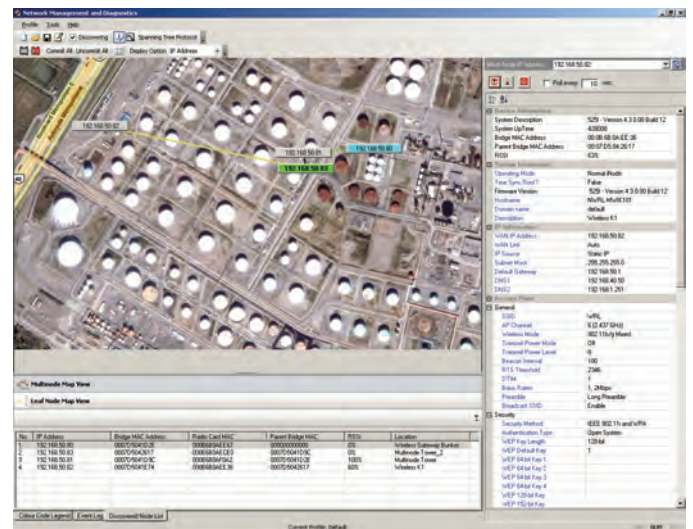
The authentication device software enables the handheld device with an infrared port to receive and transmit security keys to enable wireless field devices to join the OneWireless network. The application allows users to view the configured settings of transmitters and multinode. It also enables users to receive and transmit calibration commands to the transmitters. The authentication device software runs on mobile platforms running Microsoft Windows Mobile 5.0 operating system. The authentication device has been tested on the HP iPAQ PDA and the explosion-protected i.roc PDA.

OPC Server

The OneWireless network relies on OPC technology to provide open system communication to the wireless I/O device data. An OPC server is an integral part of the data access solution. An OPC server collects wireless device data from the wireless system gateways and makes it accessible to any OPC client application through a standard OPC DA protocol.

Network Management Diagnostics Tool

The Network Management and Diagnostics tool (NMD) is an application used to manage the nodes in a wireless network. It provides access to data relating to mesh network and field device communications, multinode and field device configuration settings and multinode operating status. The NMD is able to “sniff” for any node that is connected to the network, whether the node is physically wired to the network or communicating wirelessly. The tool contains various features that enable users to view network communications, read network node configuration information, change node configuration settings, reboot nodes and save network information. The tool includes a topographic map that shows the received signal strength indication (RSSI) of the active communication link between nodes. The signal strength may be indicated according to a color code that can be user-defined. Multinodes can be selected to be polled using SNMP to get (read) the configuration settings and then populate the settings in the interface window. Users can also set (write) certain multinode configuration values to the node.



Hardware Requirements

The OneWireless Wireless server is created by loading OneWireless Wireless Server Tools onto any PC platform that meets the following minimum requirements:

- Pentium 4, single processor 2.4 GHz processor
- 1 GB memory
- 40 GB hard drive is recommended with at least 10 GB free for the wireless tools software
- Operating System must be either Microsoft® Windows® Server 2003 or Windows XP Professional
- 10/100 Mbps Ethernet interface for wired network access to the wireless gateway
- IrDA Infrared port or infrared dongle

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Automation & Control Solutions

Process Solutions
Honeywell
2500 W. Union Hills Dr.
Phoenix, AZ 85027
Tel: 877.466.3993 or 602.313.6665
www.honeywell.com/ps

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