

# Andover Continuum™

## Wireless BACnet Field Bus

Andover Continuum is the first BACnet system to offer a Wireless BACnet Field Bus solution. Wireless technologies can be found in all the corners of the globe from mobile phones to wireless hotspots in airports where travelers can browse the Internet. As a result, wireless has lowered installation costs while providing a level of connectivity freedom never before seen. The Andover Continuum Wireless BACnet solution now introduces these cost savings and ease of installation benefits to the BACnet world of open protocol building automation.

### FEATURES/BENEFITS

#### Lower Costs and Solve Wiring Challenges

Wiring a field bus can be very labor intensive. Many field buses require controllers to be wired serially in a daisy chain, increasing the run lengths. Furthermore, certain controller locations may be extremely hard to wire, yet easily accessed by wireless. Wireless solves these challenges while greatly reducing the labor required for connectivity.

#### Full Family of Wireless BACnet B-AAC Controllers

Any one of the 17 BTL listed Andover Continuum BACnet controllers with version 4.5 firmware can become part of a wireless mesh. As a wireless BACnet controller, these controllers support the same BACnet objects and services as when they are wired to an MS/TP field bus and meet the requirements of a BACnet Advanced Application Controller (B-AAC) with support for BACnet trends per ASHRAE 135-2004. An Ethernet level controller with wireless firmware, such as a bCX1, is required to manage the wireless network.

#### 2.4 GHz Wireless Mesh Provides High Reliability

Like a spider web, a wireless mesh becomes stronger with every node that is added to the system. If a node becomes unreachable, the mesh simply heals itself by connecting to the next nearest neighbors. The wireless nodes operate at the 2.4 GHz wireless frequency, which has been approved for use in countries worldwide. The transmission level of each node can be attenuated by the software for use in radio sensitive environments. The software can also be used to select channels for systems with multiple buses.

#### Small, Attractive Wireless Adapter/Repeater

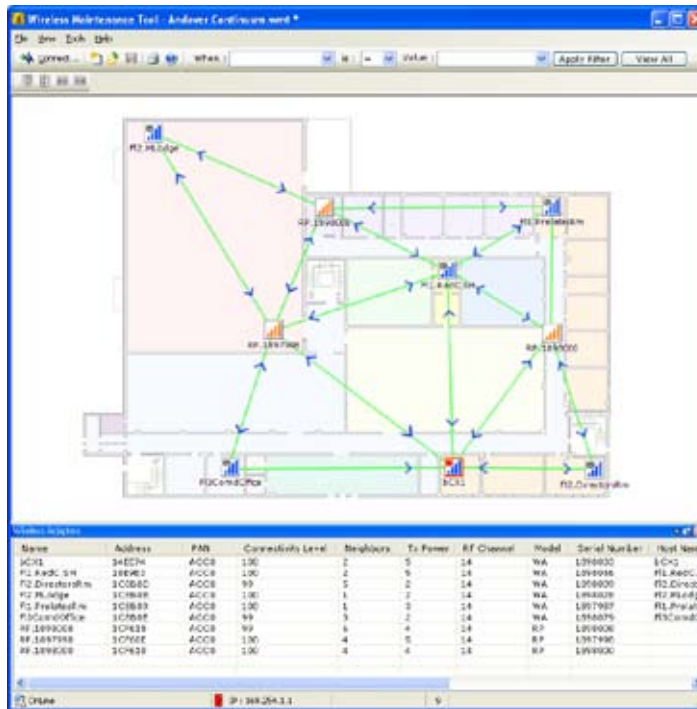
Andover Continuum BACnet controllers communicate wirelessly when a Wireless Adapter is connected to its service port. The adapter itself contains the wireless antenna and is connected to the controller with a cable which allows for flexible mounting options. The adapter is powered directly from the 3.3V power feeds of the controller's service port. Power kits are available to run the adapter as a repeater to bridge controllers that are far apart. The adapter is plenum rated and may be mounted outside the controller enclosure or within an architectural space. The adapter is light and mounts with a single screw, adhesive tape, or tie wrap.

- Lower Installation Costs
- Add Controls to Difficult-To-Wire locations
- Compatible with all Andover Continuum BACnet Field v4.5 Controllers
- 2.4 GHz Wireless Mesh Technology
  - Auto-Connecting
  - Self-Healing
- Wireless Adapter Powered by Controller
- Wireless Repeaters to help with signal propagation throughout the site
- Wireless Maintenance Tool to facilitate wireless network set up and management
- Software Selectable Channels
- Small and Attractive Form Factor Suitable for Architectural Space



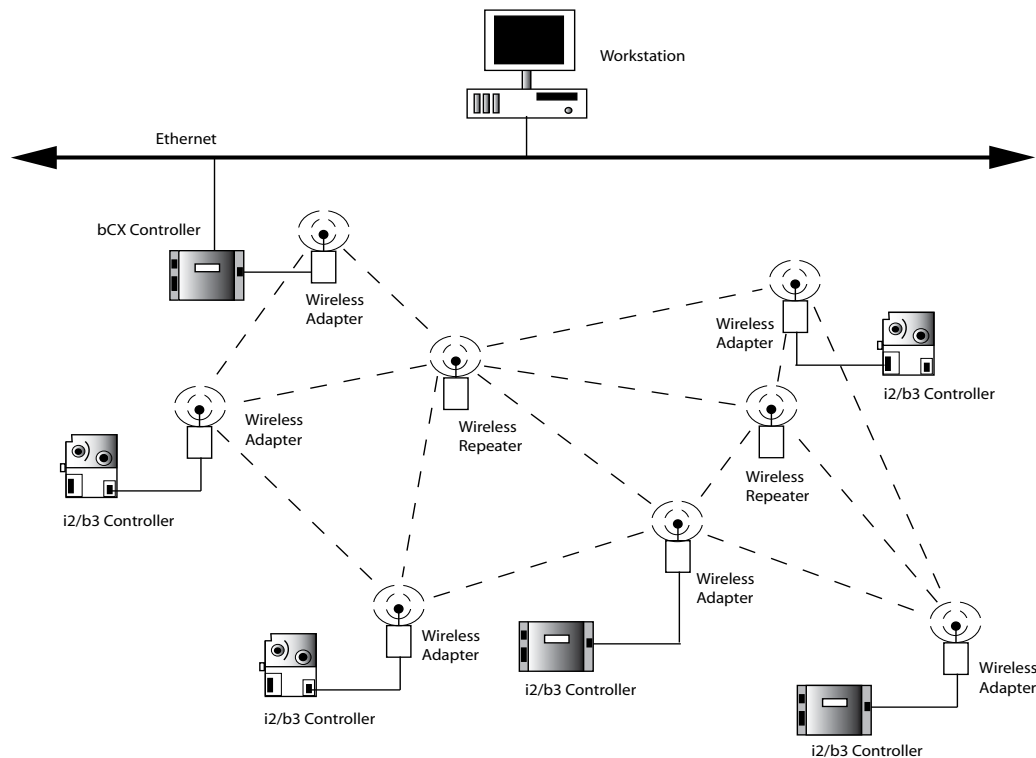
### Wireless Maintenance Tool for Mesh Optimization

Visualize your wireless mesh with the Wireless Maintenance Tool. The maintenance tool automatically discovers all wireless adapters and repeaters while showing the signal strength of each node, its neighbor table and the line quality of each connection. The graphic display allows you to arrange the wireless nodes over a floor plan graphic, making it easy to see if the placement of the wireless adapter needs to be modified or if repeaters need to be added.

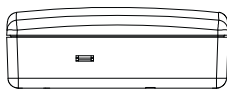
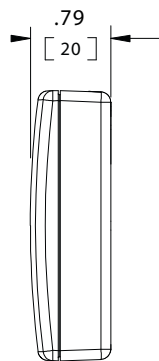
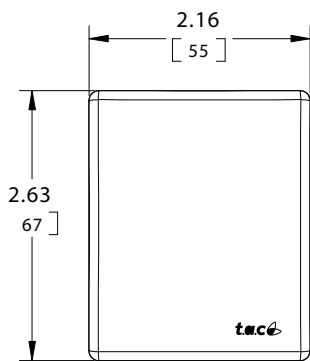


### NETWORK DIAGRAM

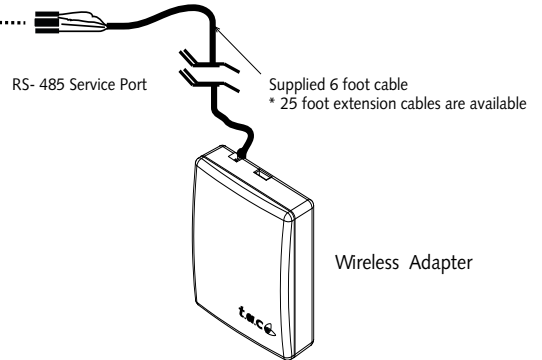
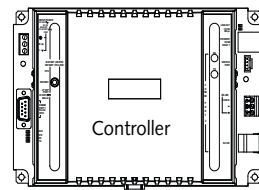
Instead of a single wired connection for communication, a wireless network controller can communicate with up to 32 wireless field level controllers through multiple paths. This way if one path is obstructed, transmission signals can propagate through alternate routes. Repeaters can be added to the network to help with single propagation and additional redundancy.



## DIMENSIONAL DRAWINGS



## CONNECTOR DETAILS



# SPECIFICATIONS

## Wireless BACnet Field Bus

### POWER

#### Wireless Adapter

Input Power: 3.3 VDC  $\pm$  5% @ 75 mA (Supplied by controller via service port connection)

#### Wireless Adapter (Operating as a Repeater)

Input Power: 3.3 - 5 VDC  $\pm$  5% @ 75 mA (Supplied by external power supply)

#### Wireless Repeater Power Supply

Input Power: 100 - 240 VAC @ 0.25 A, 50/60 Hz (Auto-switching)  
Output Power: 5 VDC @ 1 A

### ENVIRONMENTAL

#### Wireless Adapter/Repeater

Standard Operating Temperatures: -40 to 185 °F (-40 to 85 °C)  
Storage Temperature: -40 to 185 °F (-40 to 85 °C)  
Humidity (non-condensing): 0 - 95%

#### Wireless Repeater Power Supply

Standard Operating Temperatures: 32 to 104 °F (0 to 40 °C)  
Storage Temperature: -13 to 185 °F (-25 to 85 °C)  
Humidity (non-condensing): 10 - 95%

Repeater Power Supply is not intended for outdoor applications.

### COMMUNICATIONS/ CONNECTIONS

#### Wireless Communications

Frequency Range: 2.4 GHz with 16 software selectable channels  
Modulation Type: O-QPSK Direct Sequence Spread Spectrum (DSSS)  
Standard: IEEE 802.15.4  
Speed: 250 Kbps  
Output power: -15 to +6dBm software selectable (+10dBm radiated at +6dBm setting)

#### Transmission Range:

650 Feet (200 Meters) Outdoors  
Line of Sight

30 - 200 Feet (10 - 60 Meters)

#### Indoor Range

Distances vary based on environmental conditions

#### Antenna: Internal

RS-485 Speed: 50k baud

RS-485 Connector: Four pins (two data, one power, one ground)

### AGENCY LISTINGS (WIRELESS ADAPTER)

#### FCC - Federal Communications Commission

FCC Rules and Regulations CFR 47, Part 15, Class C  
FCC ID: DVE-WIRELESS

#### IC - Industry Canada Radio Equipment

IC RSS 210 Industry Canada  
IC: 1026A-WIRE

#### CE - Compliance to European Union (EU)

89/336/EEC – EMC Directive  
EN300328/EN30149, EMC – Radio Spectrum Matters

#### C-Tick - Australian Communications Authority (ACA)

AS/NZS 3548

#### WEEE – Directive of the European Union (EU)

2002/96/EC

#### UL - Underwriter Laboratories

UL916

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