



## Product Implementation Conformance Statement bCX-4000

**Date:** December 3, 2004

**Vendor Name:** Andover Controls Corporation

**Product Name:** Continuum

**Product Model Number:** bCX-4000

**Applications Software Version:** 4.3 **Firmware Revision:** 4.3

**BACnet Protocol Version:** 1 **BACnet Protocol Revision:** 3

### Product Description

The bCX-4000 is a native BACnet protocol router and BACnet/IP Broadcast Management Device (BBMD). It performs BACnet routing functions among attached UDP/IP, Ethernet (ISO 8802-3) and MS/TP networks. It optionally serves as a gateway, converting BACnet Alarms to SNMP Alarms.

### BACnet Standardized Device Profile (Annex L)

BACnet Operator Workstation (B-OWS)
BACnet Building Controller (B-BC)
BACnet Advanced Application Controller (B-AAC)
BACnet Application Specific Controller (B-ASC)
BACnet Smart Actuator (B-SA)
BACnet Smart Sensor (B-SS)

## BACnet Interoperability Building Blocks (BIBBs) Supported

BIBB	Name	BACnet Service	Init	Exec
DS-RP-B	Data Sharing - ReadProperty-B	ReadProperty		X
DS-RPM-A <sup>1</sup>	Data Sharing - ReadPropertyMultiple-A	ReadPropertyMultiple	x	
DS-RPM-B	Data Sharing - ReadPropertyMultiple-B	ReadPropertyMultiple		X
DS-RPC-B	Data Sharing - ReadPropertyConditional-B	ReadPropertyConditional		X
DS-WP-B	Data Sharing - WriteProperty-B	WriteProperty		X
DS-WPM-B	Data Sharing - WritePropertyMultiple-B	WritePropertyMultiple		X
AE-N-A <sup>1</sup>	Alarm and Event-Notification-A	ConfirmedEventNotification		X
		UnconfirmedEventNotification		X
DM-DDB-A	Device Management-Dynamic Device Binding-A	Who-Is	X	
		I-Am		X
DM-DDB-B	Device Management-Dynamic Device Binding-B	Who-Is		X
		I-Am	X	
DM-DOB-B	Device Management-Dynamic Object Binding-B	Who-Has		X
		I-Have	X	
DM-DCC-B	Device Management-DeviceCommunicationControl-B	DeviceCommunicationControl		X
DM-TS-A	Device Management-TimeSynchronization-A	TimeSynchronization	X	
DM-TS-B	Device Management-TimeSynchronization-B	TimeSynchronization		X
DM-UTC-B	Device Management-UTCTimeSynchronization-B	UTCTimeSynchronization		X
DM-RD-B	Device Management-ReinitializeDevice-B	ReinitializeDevice		X
DM-BR-B <sup>2</sup>	Device Management-Backup and Restore-B	AtomicReadFile		X
		AtomicWriteFile		X
		ReinitializeDevice		X
NM-RC-B	Network Management-Router Configuration-B	Who-Is-Router-To-Network	X	X
		I-Am-Router-To-Network	X	X
		Initialize-Routing-Table		X
		Initialize-Routing-Table-Ack	X	

<sup>1</sup> Used to support SNMP alarms.

<sup>2</sup> A single stream-based file object is provided, to support Backup and Restore. Record-based access is *not* supported. The file has a proprietary format, which is produced by the controller during a Backup operation. Any attempt to write the file using data not obtained by reading it, will result in an error.

### Segmentation Capability

<b>X</b>	Able to transmit segmented messages	Window Size: 1
<b>X</b>	Able to receive segmented messages	Window Size: 1

### Standard Object Types Supported

Object Type	Supported	Creatable	Deletable
Device	X		
File	X		

## Object Types and Properties Supported

Properties that are Writable and Optional are indicated. See Restrictions on Object Identifiers and Names, below. Unsigned values are limited to 4 294 967 294.

Device		
Property	W	O
APDU_Segment_Timeout	X	
APDU_Timeout	X	
Application_Software_Version		
Backup_Failure_Timeout	X	
Configuration_Files		
Database_Revision		
Daylight_Savings_Status	X	
Description	X	X
Device_Address_Binding		
Firmware_Revision		
Last_Restore_Time		
Local_Date		
Local_Time		
Location	X	X
Max_APDU_Length_Accepted		
Max_Info_Frames	X	
Max_Master	X	
Max_Segments_Accepted		
Model_Name		
Number_Of_APDU_Retries	X	
Object_Identifier		
Object_List		
Object_Name	X	
Object_Type		
Protocol_Object_Types_Supported		
Protocol_Revision		
Protocol_Services_Supported		
Protocol_Version		
Segmentation_Supported		
Serial_Number		X
System_Status		
Time_Synchronization_Recipients	X	
UTC_Offset	X	
Vendor_Identifier		
Vendor_Name		

Description is limited to 32 characters.  
 Location is limited to 132 characters.  
 Max\_Info\_Frames is restricted to the range 1..127.  
 Number\_Of\_APDU\_Retries is restricted to the range 0..255.  
 Serial\_Number is a proprietary property – See “Serial Number” below.

File		
Property	W	O
Archive	X	
File_Access_Method		
File_Size	X	
File_Type		
Modification_Date		
Object_Identifier		
Object_Name		
Object_Type		
Read_Only		

File\_Size is writable when in Restore mode. Values limited to zero and current file size.

### Data Link Layer Options

<b>X</b>	BACnet IP
<b>X</b>	BACnet IP, Foreign Device
<b>X</b>	ISO 8802_3, Ethernet
	ANSI/ATA 878.1, 2.5 MB ARCNET
	ANSI/ATA 878.1, RS_485, baud rate(s)_____
<b>X</b>	MS/TP master, baud rate(s)_____9600,19200,38400,76800_____
	MS/TP slave, baud rate(s)_____
	Point-To-Point, EIA 232, baud rate(s)_____
	Point-To-Point, modem, baud rate(s)_____
	LonTalk, medium: _____
	Other

### Device Address Binding

Static Device Binding Supported  Yes  No

## Networking Options

<input checked="" type="checkbox"/>	Router	List all routing configurations __BACnet IP, MS/TP, Ethernet__
<input type="checkbox"/>	Annex H, BACnet Tunneling Router over IP	
<input checked="" type="checkbox"/>	BACnet/IP Broadcast Management Device (BBMD)	
<input checked="" type="checkbox"/>	Support registrations by foreign devices	

## Character Sets Supported

<input checked="" type="checkbox"/>	ANSI X3.4	<input checked="" type="checkbox"/>	ISO 8859-1
<input type="checkbox"/>	ISO 10646 (UCS-2)	<input type="checkbox"/>	ISO 10646 (UCS-4)
<input type="checkbox"/>	IBM /Microsoft DBCS	<input type="checkbox"/>	JIS C 6626

## Serial Number Property

Every Andover Controls device has a unique serial number, assigned at the factory. The serial number is made available by the Serial\_Number property of the Device object. The property identifier is 515, and the data type is Unsigned.

## Restrictions on Object Identifiers and Names

The instance number portion of the Object\_Identifier property has a restricted range, which depends to some extent on the object type. The following table gives the valid range of instance numbers:

Object Type	Minimum	Maximum
Device	1	4194303
File <sup>1</sup>	1	1

For all object types, the Object\_Name is limited to 16 characters. The first character must be alphabetic, and the remaining characters must be alphabetic, numeric, or one of ‘\_’ or ‘.’.

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<sup>1</sup> Only one file object exists (for backup and restore) and users do not create objects of this type.