

The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) Device Module operates within the Universal Server architecture and provides comprehensive support for devices using the BSAP Protocol and Internet Bristol Protocol (IBP). The BSAP Module permits the user to create general or standard BSAP device configurations for devices that use the BSAP protocol for real-time communications. In addition, the BSAP module provides full support for collection of Electronic Flow Measurement (EFM) data using standard BSAP Archive methods.

Device Features

Each BSAP device includes features common to all devices within the Universal Server Architecture:

- Full support for OPC 1.0 and 2.05, SuiteLink, and DDE clients, in any combination.
- Each device may be configured for both a primary and secondary circuit for communications using any of the available circuits defined in the Universal Server. Each device may be configured to use the primary circuit only, secondary circuit only, or alternate between the two. Options also include automatic fail-over between the circuits.
- Available circuits may include direct serial, radios, dialup, CDPD, TCP/IP, UDP/IP, and terminal server connections.
- Each device includes a complete set of standard diagnostic items that may be viewed using the Universal Server remote diagnostics viewer or added to any OPC, SuiteLink, or DDE client.
- Devices may be configured to perform data acquisition automatically, only when clients are connected, or upon demand by client programs only.
- Command items allow complete control of devices from connected clients. Command items include setting device scan status, selecting active circuits, and requesting immediate demand scans.
- User-selectable log options provide comprehensive log messages for system monitoring and troubleshooting. The **Device Diagnostics** screen, below, performs interactive diagnostics and displays streaming device transactions and activity.

Device State:
Comm Status:

Parameter Name	Current	Today	Description
Last Update	03/09/04 12:23:03	03/09/04 12:23:03	Time of Last Diagnostic Update
Last Reset	03/09/04 12:23:03	03/09/04 12:23:03	Time of Last Diagnostic Reset
Total Transactions	0	0	Total Scan Attempts since reset
Good Scans	0	0	Total Successful Scans
% Throughput	0.0	0.0	Percent Throughput 0.0 - 100.0 %
Failed Scans	0	0	Total Failed Scans for this device
Good Outputs	0	0	Total Command Output Transactions
Failed Outputs	0	0	Total Failed Command Outputs
Retries	0	0	Total Number of Transaction Retries
Circuit Failures	0	0	Total Communications Failures
No Connections	0	0	Failed Connection Attempts
Lost Connections	0	0	Lost Connections
Device Timeouts	0	0	Device Timeouts (No Reply)
Invalid Replies	0	0	Invalid Device Responses (Bad CRC's)
Error Responses	0	0	Device Replied with Error Response
Requested Scan Interval	0	0	Current Requested Scan Interval (msec)
Last Scan Interval	0	0	Most Recent Scan Interval (msec)
Max Scan Interval	0	0	Maximum Scan Interval (msec)
Avg Scan Interval	0	0	Average Scan Interval (msec)
Scan Duration	0	0	Last Scan Duration (msec).
Item Count	0	0	Total Client Device Items
Active Items	0	0	Total Active Client Items

Status:
Update Interval: secs

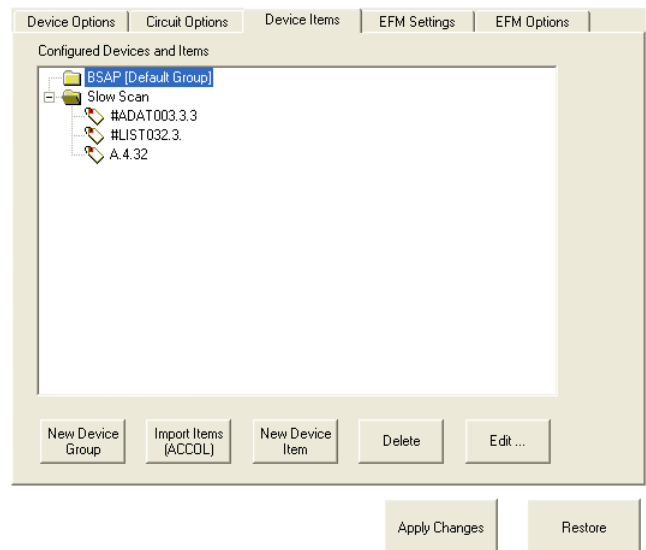
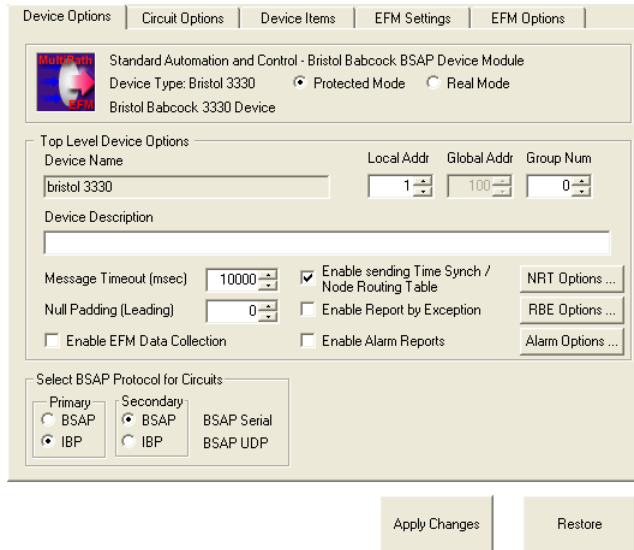
Last Error:
Last Good Poll:

Real-Time Features

The BSAP Module includes several standard BSAP Device types, such as 3305, 3310, 3330, 3335, 3340, and 3530. Other devices that support the BSAP or IBP can be configured, as well. Standard features of the BSAP Module include:

- Supports read/write of analog, logical, and string signals.
- Read/write of analog and logical arrays.
- Read/write of signal lists.
- Supports report-by-exception updating of items and logging of alarms.
- Supports creating and sending the Time Synchronization/Node Routing Table message.
- Supports local addressing, global addressing, and expanded BSAP addressing (group number). Automatically detects immediate response mode devices. Virtual node configurations are not needed with expanded BSAP addressing.
- Communicates to slave or pseudo slave ports. Can replace Data Concentrator.
- Dialog to add BSAP signal, array, and list item names for client access. Includes item name and settings import from an ACCOL source file. All tag names are available in any OPC Browser.
- Tag items may be designated as autoscan to force data acquisition of the item upon startup with no client connected.
- The Report-by-Exception values are stored so that when a client activates an item, the server can return the last value received without having to wait for the next exception.
- Real-time acquisition may be set to occur at any time period, at a specific time of day, or upon client demand only.
- Optimized device scanning to minimize the number of messages required for data acquisition for current active items.
- Automatic retries of failed device IO transactions with user-configurable retries and response delays. Also includes delayed automatic retries of failed responses of global messages to second or lower level devices with user-configurable message timeout.
- Prioritized processing of output commands and demand read transactions.
- Supports full import/export of single device or all BSAP devices to/from CSV format to permit creation of large systems or to make global configuration changes.
- Supports downloading of the ACCOL load file.

The **Device Options** (left) and **Device Items** (right) screens for the BSAP Module are displayed below.



Electronic Flow Measurement

The BSAP Device Module includes support for automatically uploading EFM data from field devices. All uploaded EFM data is forwarded to the EFM Server for storage and reporting. Refer to the Electronic Flow Management (EFM) datasheet for information concerning EFM data storage and reporting.

- Supports uploading EFM data from archive files for devices that support Manage Archive Files.
- Supports uploading EFM data from Push-Down Arrays, Wrap-Around Arrays, and Multi-Wrap Arrays.
- Supports uploading alarms and events from the audit trail file for devices that support Audit Trail Files.

Specifications

<p><u>Hardware Requirements</u></p> <p>Minimum:</p> <ul style="list-style-type: none"> • PIII 900 MHz Processor • 100 MB Hard Disk • 64 MB RAM 	<p>Recommended:</p> <ul style="list-style-type: none"> • P4 1.4 GHz Processor • 500 MB Hard Disk • 128 MB RAM 	<p><u>Software Requirements</u></p> <ul style="list-style-type: none"> • Windows 2000 SP4 or greater • Windows XP SP1 or greater
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