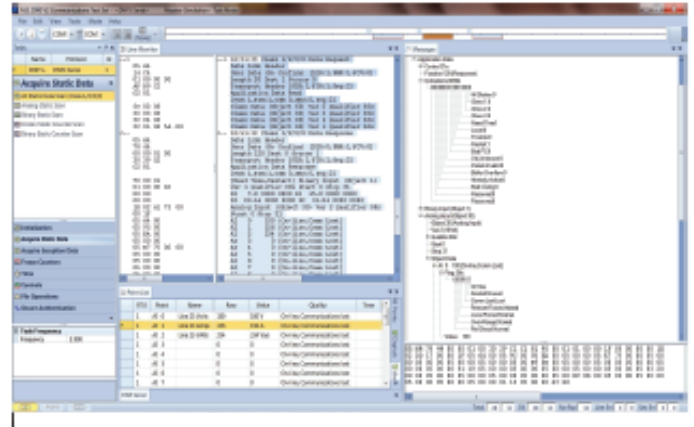
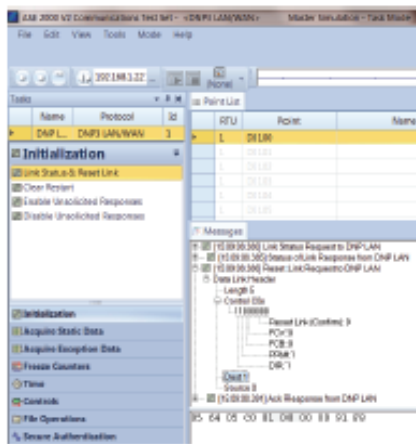


# ASE2000

## Version 2 Communication Test Set



### The Evolution in Protocol Analysis...



**ASE2000 Version 2** is the first major upgrade of the ASE2000 Communication Test Set first released in 1998. ASE2000 Version 2 (V2) contains all functionality in Version 1 (V1) plus several new features, enhancements for ease of use, and upgrades requested from our many users.

The ASE2000 V2 can operate in two modes: **Exchange** and **Task**. **Exchange** operation is the same as in V1, with Exchange, Line Monitor, Input Point Data, Line Analyzer, and Event Log File views.

The new **Task** Mode works from a user defined device data base, each device containing protocol, address, and point configuration information. Operation proceeds by selecting a device and a task such as "Acquire data", "Control relay", or "Write file". Using device information, the ASE2000

automatically builds and transmits messages required to perform the task selected. The Task list adjusts to the protocol of the selected device.

ASE2000 V2 contains two new views not present in V1. The first, shown above, is the Messages view, an alternate way to present communication line data. Both the Line Monitor view from V1 and the new Messages view are available. The Messages view compact presentation, one message per line, shows more messages at one time than the Line Monitor view. Each line shows message direction, time, name, and device ID. Selecting message expansion targets present more detailed information. The DNP3 Reset Link Request message, above, has been expanded to show all DNP3 message fields down to the bit level.

### Expedite Problem Solving:

Simplify problem reporting and analysis between vendors and users by transferring communication data via capture files. A **Free** Capture file viewer is available so ASE2000 customers can send capture files to anyone to view and analyze. Please visit our website for more details.



## Significant New Features in ASE2000 V2

### All Protocols

- > Task Mode (described previously)
- > Messages display (described previously)
- > RTU Simulation allows modification of individual point values during online operation. Events are generated and static data modified as appropriate
- > Comprehensive online help
- > Enhanced capture file create, search, and query capabilities

### DNP3

- > Device Certification with report
- > Secure Authentication
- > File Transfer
- > Dual Endpoint

### IEC 608770-5-101 and -104

- > File Transfer

### General Information

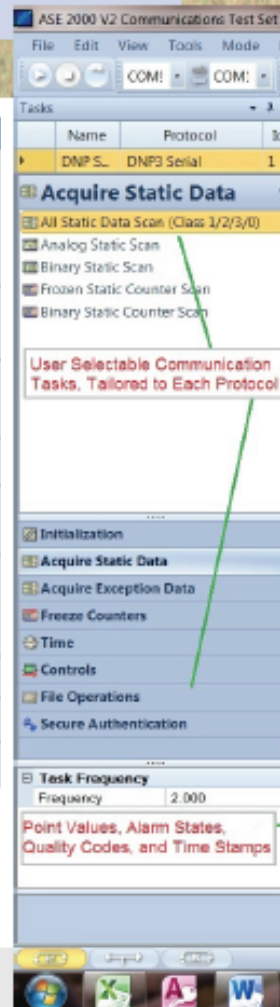
- Windows XP, Vista or 7 (32 and 64 bit)
- Support available for 80\_ bit & byte protocols
- Common user interface for all protocols
- Line Monitoring, Master Simulation and RTU Simulation modes
- English interpretation of communication messages
- Communication session capture and retrieval
- Detailed Communications statistics

### Views

Point values	Tabular display of analog, digital, and pulse accumulator points showing names, raw and engineering units values, quality codes, time stamps, and optional alarm processing. In RTU Simulation mode, allows entry of point values for transmission to master
Monitoring	Shows raw and interpreted communication message data side by side. Selecting a field in one view highlights the corresponding field in the other
Messages	An alternate communication line data view. Initially one line per message, but each can be expanded for additional detail
Exchange List	Protocol message definition and configuration, used in Exchange Mode only
Line Analyzer	A digital plot of Receive Data and Line Carrier signals for two channels. Plotted with millisecond resolution. This view requires ASE's BCOM-USB device
Event Log	An ASCII log of significant events configurable to include communication errors, analog limit alarms, digital point changes, and significant messages such as control actions
Timeline	Graphical presentation of transmit and receive communication line activity
Tasks	A list of selectable device tasks tailored to the active device's protocol
DNP3 Certification	A list of DNP3 certification procedure steps and test results

### Additional Features

- Message time stamp and RTU turn-around delay to 1 millisecond resolution
- Event triggering. ASE2000 can be instructed to stop on significant event detection
- RTU Simulation has been enhanced for Task Mode operation
- Display filtering allows only selected messages to be shown, such as for a specific operation like control actions, or to a specific RTU only
- Can transmit user specified communication errors for a complete capabilities test



ASE2000 V2 hardware requirements are an ASE dual-channel BCOM-USB device or an USB dongle. While V2 will not operate with an ASE PCMCIA card, a process is available to exchange a PCMCIA card for a BCOM-USB device. All ASE2000 V2 models include software, documentation, cables, and adapters.

**ASE2000 Models:**

- > ASE2000-USB-RS comes with a dual-channel BCOM-USB device
- > ASE2000-USB-M comes with a dual-channel BCOM-USB device and dual-channel Bell-202 modem
- > ASE2000-USB-COM comes with a USB security key and uses standard PC COM ports (or USB/COM adapters) for serial communication

Please note that the product codes are the same as for an ASE2000 V1 or V2. Once officially released, V2 software will be shipped for all ASE2000 orders. V1 software will remain available for download from the ASE Web site, [www.ase-systems.com](http://www.ase-systems.com). Users with a valid V2 license (contained on the BCOM-USB device or USB dongle) will be able to run V1 software on the same computer as a V2 installation.

The screenshot displays the ASE2000 software interface with several key components:

- Visual Line Activity, Request and Response Data and Carrier Signals:** A top bar indicating the current data stream type.
- Line Monitor:** A central pane showing raw and interpreted data for a Class 1/2/3/0 Data Request and Response. It includes fields like Data Link Header, User Data, Transport Header, and Application Data.
- Messages:** A right-hand pane showing an expanded view of a message field, such as 'Application Data' with sub-fields like 'Control Ctx', 'Indications 0000', and 'Binary Input (Object 1)'. A red box highlights this as a 'Detailed Visual Presentation of Expandable Message Fields'.
- Raw and Interpreted Data:** A red box points to the raw data in the Line Monitor pane.
- Point List:** A table at the bottom left listing RTU points and their status.

RTU	Point	Name	Raw	Value	Quality	Time
1	AI 0	Line 23 Volts	300	300 V	On-line, Communications lost	
1	AI 1	Line 23 Amps	356	356 A	On-line, Communications lost	
1	AI 2	Line 23 VARs	334	334 Vars	On-line, Communications lost	
1	AI 3		0	0	On-line, Communications lost	
1	AI 4		0	0	On-line, Communications lost	
1	AI 5		0	0	On-line, Communications lost	
1	AI 6		0	0	On-line, Communications lost	
1	AI 7		0	0	On-line, Communications lost	

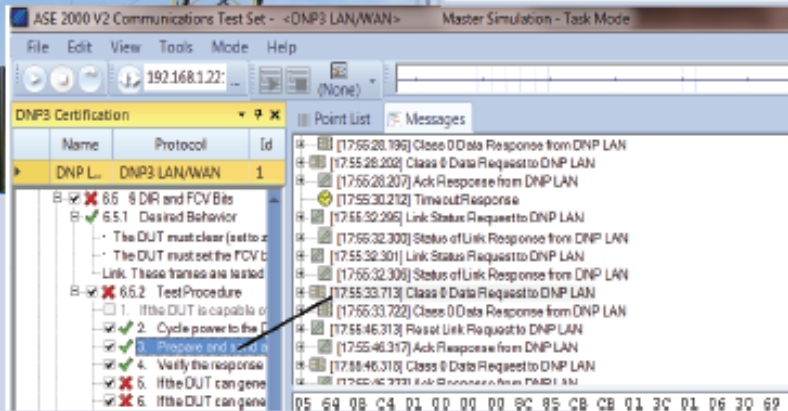
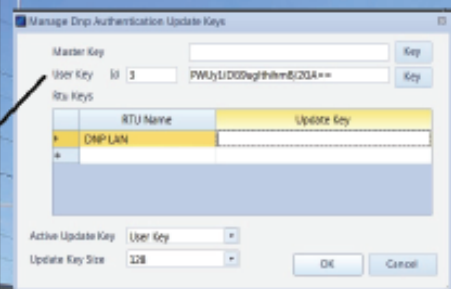
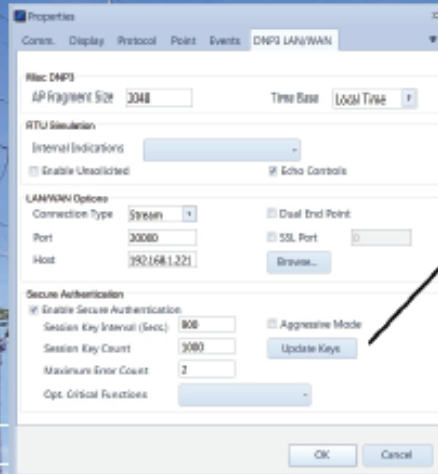
1671 Dell Avenue, Suite 200, Campbell, CA 95008-6900  
 phone: (408) 364-0500 fax: (408) 364-0550



email: [sales@ase-systems.com](mailto:sales@ase-systems.com)

## DNP3 Additions

- Secure authentication
- Device certification
- DNP3 file transfer operations
- Dual endpoint processing



## DNP3 Certification

Test Screen

- ✗ indicates failed test
- ✓ indicates passed test

- Clicking on a test step locates the associated communication messages, as shown
- Includes web based reporting

### DNP3 Certification Procedures

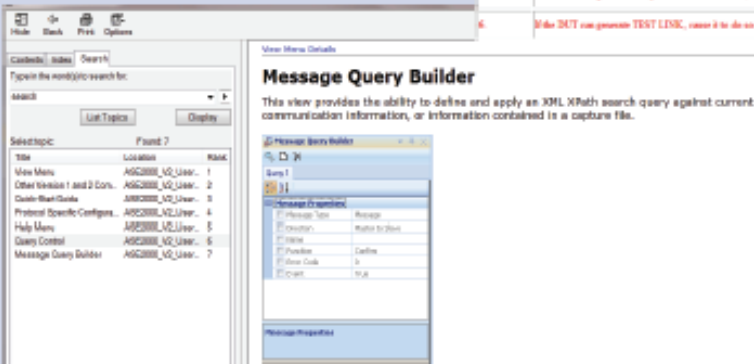
Subnet Level 1

Version 1.4

15-March-2008

### Data Link Certification Test Results

Test Number	Title	Status	Failure Reason
6.4	Test Status	Pass	
6.4.2	Test Procedure	Pass	
6.5	DIR and FCV Bits	Fail	
6.5.2	Test Procedure	Fail	
2	Cycle power to the DUT	Pass	
3	Prepare and send a READ request for Class 0 data (Object 60 Variables 1) using Qualifier Code 0x04 and a link control block 0x04	Pass	
4	Verify the response from the DUT uses data link control block 0x04 in Unacknowled User Data with the DIR bit set and the FCV bit set	Pass	
5	If the DUT can process REQUEST LINK STATUS, cause it to do so and verify that these frames have the DIR or FCV bit set	Fail	Exclusive data flagged
6	If the DUT can process TEST LINK, cause it to do so and verify that these frames have the DIR bit clear and FCV bit set	Fail	Exclusive data flagged



## CONTACT ASE

 **Applied Systems Engineering, Inc.**

1671 Dell Avenue, Suite 200, Campbell, CA 95008-6900  
 phone: (408) 364-0500 fax: (408) 364-0550

email: [sales@ase-systems.com](mailto:sales@ase-systems.com)

[www.ase-systems.com](http://www.ase-systems.com)