COSMOS is an operations and test system that provides all the functionality needed to command and control any system from a complete satellite to an individual board. COSMOS is easier to configure and use, more cost-effective, and provides more functionality than any competing product.

Advantages:

- Full Lifecycle System: Supports board level test, box level test, Al&T, and
 operations providing a consistent user interface throughout the full lifecycle
 of a product
- Get Up and Running Fast: Easy configuration gets your project up and running within days, not months
- Cost Savings: Simple setup and maintenance reduce project costs
- Extensibility: Modular design allows for connecting to any other system that provides an interface, from test equipment to deliverable products
- **Customizability:** Create custom tools and data visualizations using the same libraries used to build the provided 15 COSMOS applications
- Compatibility: Runs on Windows, Linux, and Mac OSX operating systems
- Technically Advanced: Built using modern, supported, open-source technologies

Graphing:

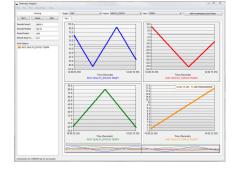
- **Realtime and Offline:** Processes multiple telemetry points from the real-time telemetry stream or post-test from logs
- Easy: Rapidly select the desired telemetry mnemonics from drop down lists
- Advanced: Design and organize your data into multiple plots and across multiple tabs for consistent viewing by all users

Telemetry Display:

- Ready to Go: Packet Viewer provides a display of telemetry values with no screen configuration required
- Innovative Displays: The Limits Bar Widget (shown left) allows the user to know where a telemetry point is within its limits range
- **Information On-Demand:** Right click menus provide detailed information on any telemetry point
- **Simple Setup:** Define custom telemetry screens using plain text configuration files

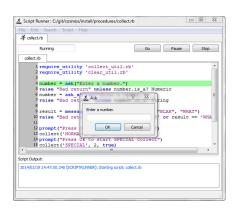
Commanding and Scripting:

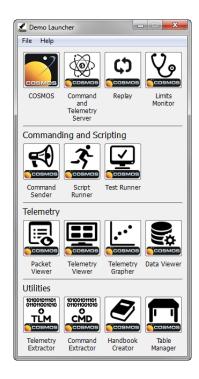
- Integrated Tools: Script execution, editing, and syntax checking in one tool
- Easily Write Tests: Easy script development aided by Command/Telemetry mnemonic code completion













- **Powerful Language:** Full capabilities of the Ruby programming language are available in test procedures
- Logged Execution: All commanding, script execution, and user input is logged

Post-Test Analysis:

- Review Logs: Easily review logged data for post-test analysis or anomaly investigation, and test archiving. Extract to CSV or view within tools
- Replay Data: Replay data to watch how events unfolded

Provided Tools:

COSMOS is made up of the following 15 applications:

- **Command and Telemetry Server:** Provides realtime commanding, telemetry reception, logging, limits monitoring, and packet routing
- **Command Sender:** Provides a graphical interface for manually sending individual commands
- **Script Runner:** Executes test scripts and provides highlighting of the currently executing line
- Test Runner: Provides a high level framework for system level testing including test report generation
- Packet Viewer: Provides realtime visualization of every telemetry packet that has been defined
- Telemetry Viewer: Provides custom telemetry screen functionality with advanced layout and visualization capabilities
- Telemetry Grapher: Provides realtime and offline graphing of data
- Data Viewer: Provides highly customizable text based telemetry visualization
- Limits Monitor: Monitors telemetry with defined limits and shows items that currently are or have violated limits, with the capability to respond to limits violations
- **Telemetry Extractor:** Extracts telemetry packet log files into CSV data
- Command Extractor: Extracts command packet log files into human readable text
- **Table Manager:** Provides a binary file editor that can be used to build configuration tables or other binary data
- Handbook Creator: Creates html and PDF documentation of available commands and telemetry packets
- Replay: Replays logged data as if it was being received by the Command and Telemetry Server
- **Launcher:** Provides a graphical dashboard for launching each of the tools that make up the COSMOS system.

Additional Information:

- Easy Installation: GUI-based installation wizard on Windows, simple instructions for Linux and Mac OSX
- Access Control: Access control lists can be specified to block unauthorized access
- Log File Analysis: Display logged data in graphs, Excel compatible text files, or on telemetry screens
- **Use Standalone or Alongside:** Can be used as the primary operations and test system or alongside an existing system
- **Change Management:** The use of plain text configuration files makes differencing what has changed between project releases a breeze
- **Configuration Management:** Built in CRC checking lets you know if any files have been modified
- Interface Compatibility: Connect to embedded systems using Ethernet sockets (TCP/IP or UDP), or serial out of the box. Connect to any other interface by plugging in custom code